XC Series Edit Tool XCP Pro

User Manual

Xinje Electronic Co., Ltd.

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1、Use explanation

This chapter focuses on XC XCP Pro PC software installation system requirements, installation and unloading steps.

1-1．Install system requirements

1-2．Install steps

1-3．Uninstall steps

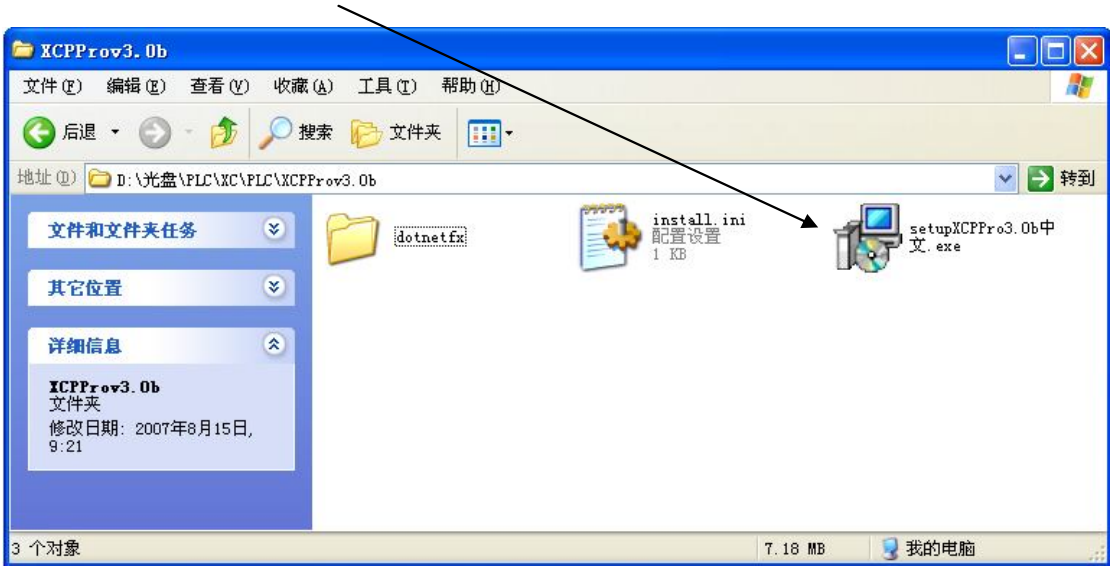
1-1. System requirements:

This software suit for running on the platforms as Windows 2000, Windows NT, Windows XP and other above.

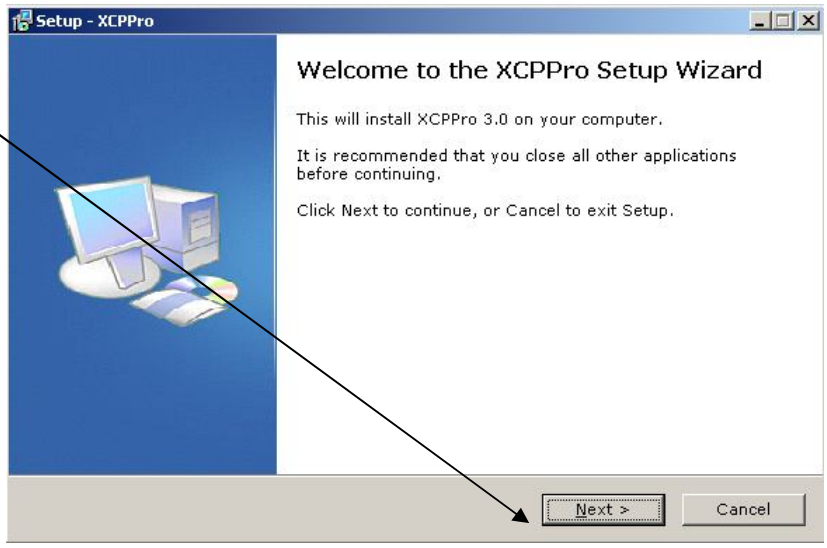
1-2. Install steps

1、If your operation system have not installed the Framework2.0 library before, you should run the installation process "dotnetfx.exe" first, which is in the subfolder "dotnetfx" of the installation folder;

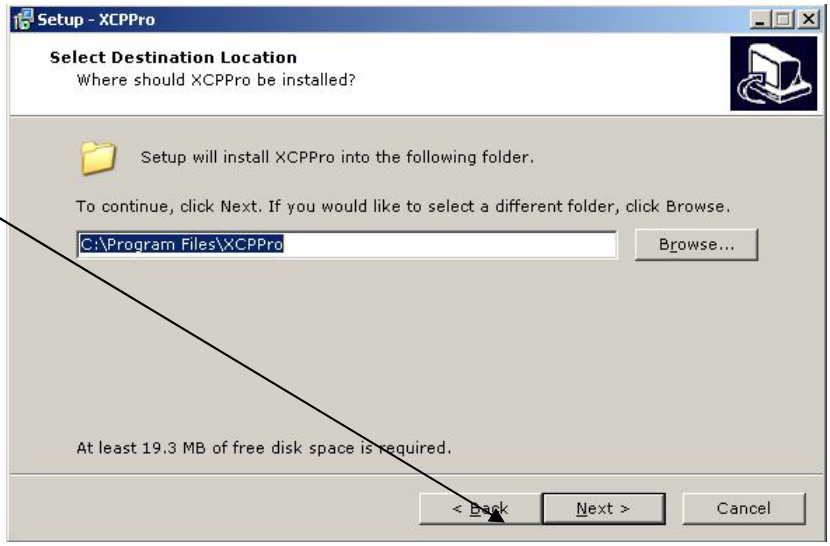
2、Double-click to operate the installation file “setup.exe”;



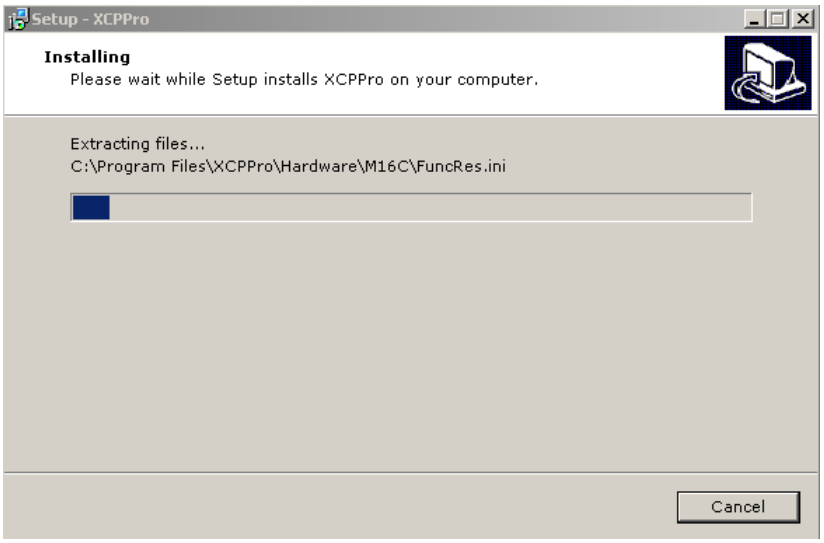
①Click “Next”.


Setup - XCPPro
Welcome to the XCPPro Setup Wizard
This will install XCPPro 3.0 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

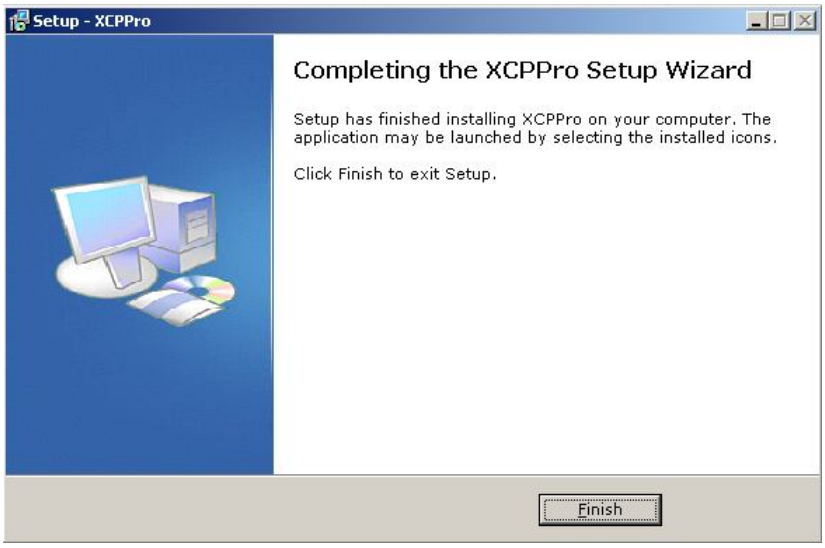
②Choose software installation path, click "next step", until the "install" button appear.


Setup - XCPPro
Select Destination Location
Where should XCPPro be installed?
Setup will install XCPPro into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\XCPPro
Browse...
At least 19.3 MB of free disk space is required.
< Back
Next >
Cancel

③ Shows that the XCPPro is installing, please wait.



④ Until the show "the installation is complete," click "finish", hereto, the XCP software installation is completed.


Setup - XCPPro
Completing the XCPPro Setup Wizard
Setup has finished installing XCPPro on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
Finish

1-3. Uninstall steps

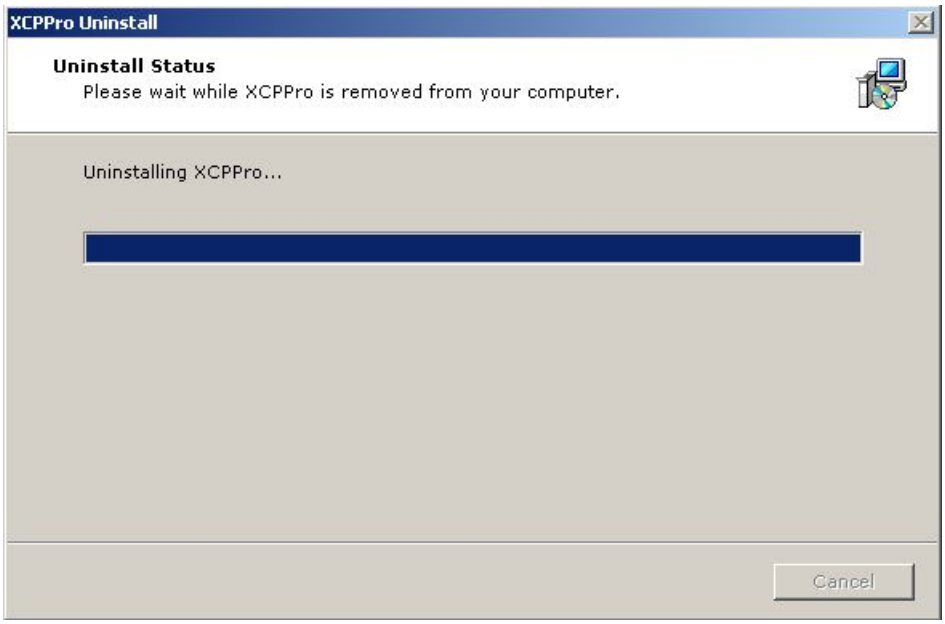
1、Choose "Start"→ "Setting"→ "Control panel"

2、Double-click "Add/Delete XCP edit tool"

3、Pitch on "XCPPro3.0" in the list, press "Delete"in the lower right corner

4、Click [Yes] in the "Add or Remove Programs" screen

5、Uninstalling XCPPro



6、Promopt the uninstallation is successful.

2、Basic operation

This chapter focuses on the most basic operations in XCP Pro, including open and close software, create and open the project, add and delete PLC type in the same project.

2-1．Open and close the XCP Pro

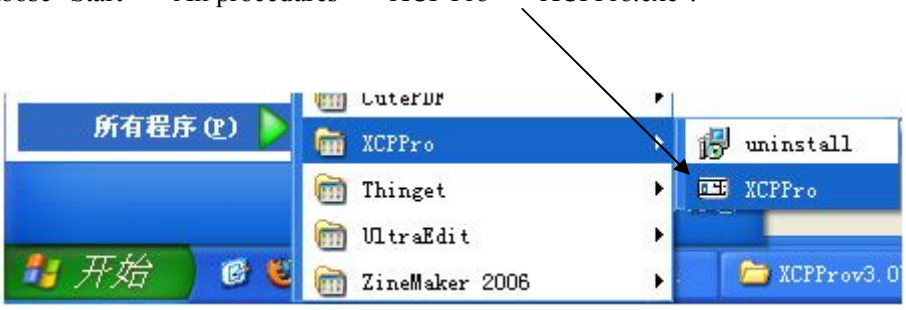
2-2．Create and open the project

2-3．Add and delete PLC type

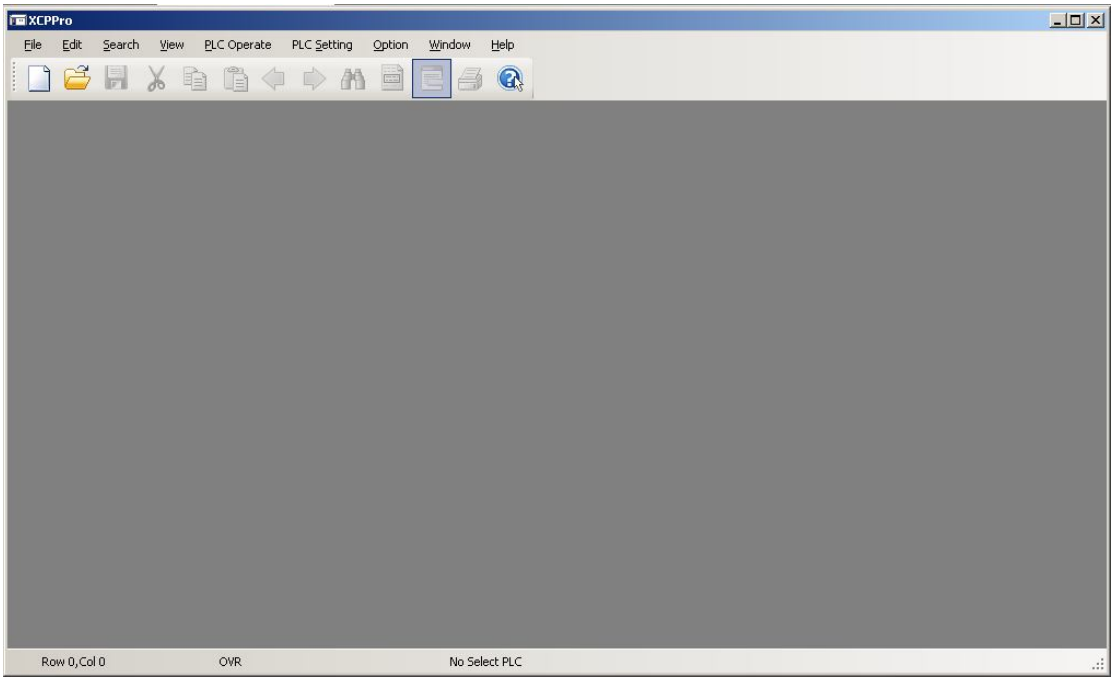
2-1. Open and close the XCP Pro

1、Open the XCP Pro

（1）Choose "Start"→"All procedures"→"XCP Pro"→"XCPPro.exe".



（2）When the XCP Pro has just started, the screen display as shown below:



Note: You can also double-click the shortcut icon " " on the desktop to open the procedure.

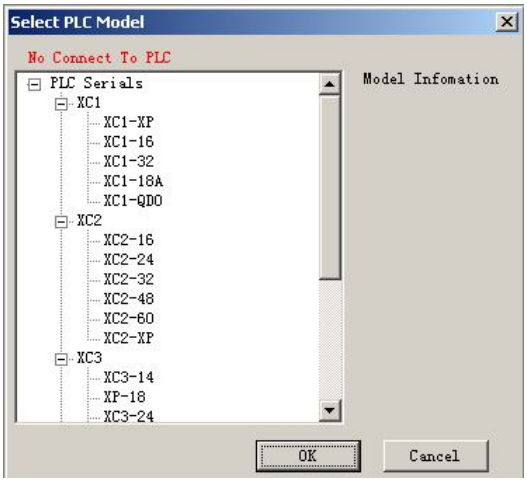
2、Close the XCP Pro

Choose "File"→"Exit", or directly click the button " ", the XCP Pro will be closed.

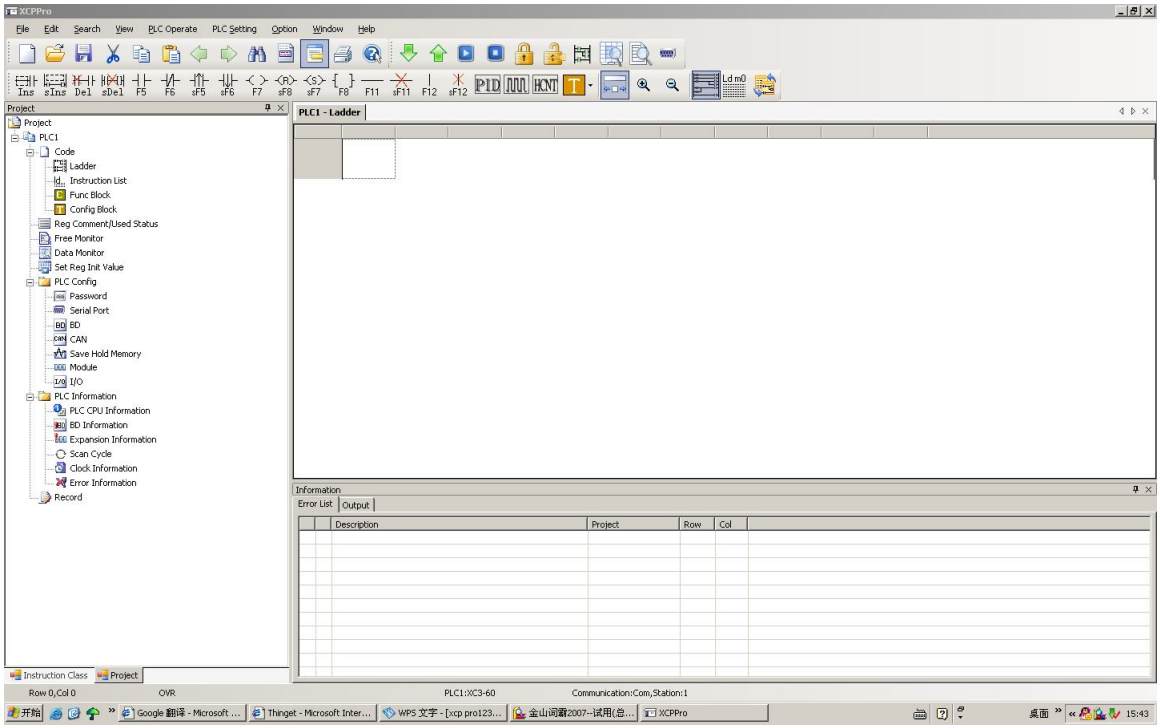
2-2. Create and open the project

1、Create a new project

（1）Choose "File"→"New project Ctrl+N ", or click icon " ", the PLC model selection windows will pop up. If PLC has connected currently, the software will automatically detect the model, as the default, as follows:

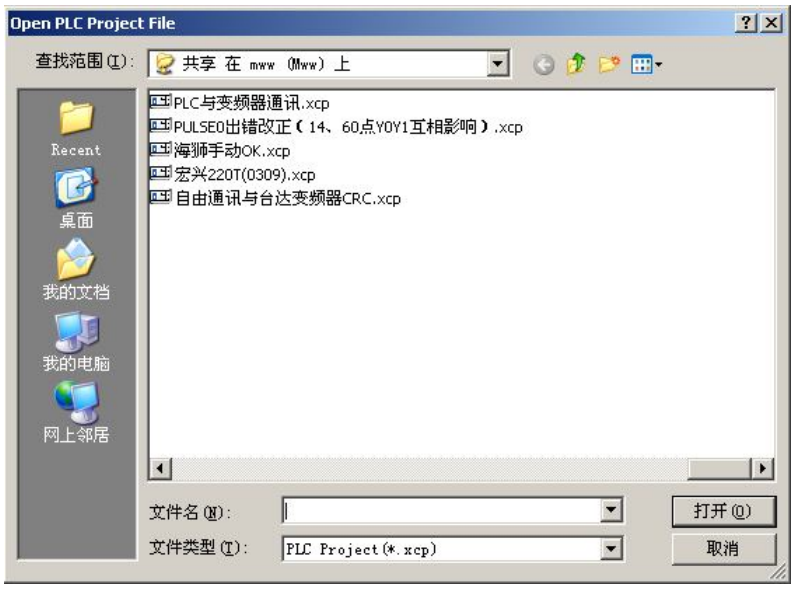


（2）Select the PLC model in the "Select PLC Model" windows, then click "OK", the establishment of a new project is completed. As shown below:



2、Open project

Choose "File"→"Open project", or click icon " ", then select *. xcp type of file in the "Open PLC project file" dialog box, click the "open", it's completed.



Note: Usually, when you open a XCP project, the system backup the original file automatically, file named *. rak for reunification. When the need to use the file, change the suffix to be ". xcp", then open it in XCP Pro.

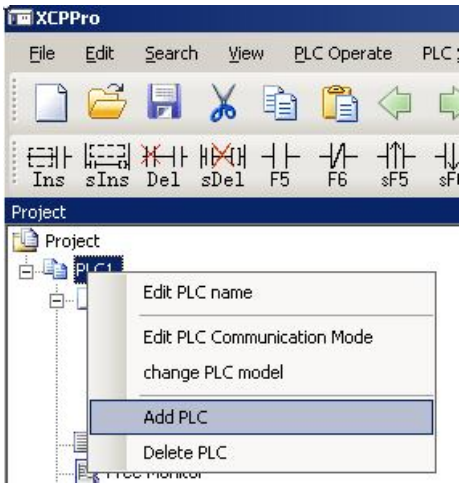
2-3. Add and delete the PLC mode

When project new created, it is defaulted for PLC1. When user needs to edit a number of PLCs, they can add multi-object to a interface.

1、 Add PLC

Method 1：Click "File"→"Add PLC".

Method 2：In project column which is on the left side, right-click "PLC1"→"Add PLC", as



follows:

When PLC is added successfully, it will be named "PLC2" acquiescently, and the project column in the left side will change also, as shown below:

When edit different PLCs, only need to click the plc simply. What's more, users can also modify appropriate name, edit communication mode, change models or delete operation on the corresponding PLC .

2、 Delete models

Method 1: Right-click the PLC to delete directly, select "Delete PLC".

Method 2: First select the PLC to delete, and then to "File"→"Delete PLC".

After the operation, system will hint whether or not to delete, as follows:

To confirm the deletion, click "OK", otherwise, click "Cancel."

Note: The code between different PLC editor objects can copy each other, the code between different projects can also copy and paste.

3、Basic introduction of edit environment

This chapter focuses on basic structure of XCP Pro software, the main function of the Toolbar, the menu bar, the project bar, and shortcut key in common use.

3-1. The basic form of interface

3-2. Conventional Toolbar

3-3. PLCToolbar

3-4. Ladder input Toolbar

3-5. Else

3-6. Menu bar

3-7. Project bar

3-8. Shortcut key introduction

3-1.The basic form of interface

Title bar: Behind the XCPPro， display the opening ladder program file name and path.

Menu bar: Choose the operation to carry out in the drop-down menu.

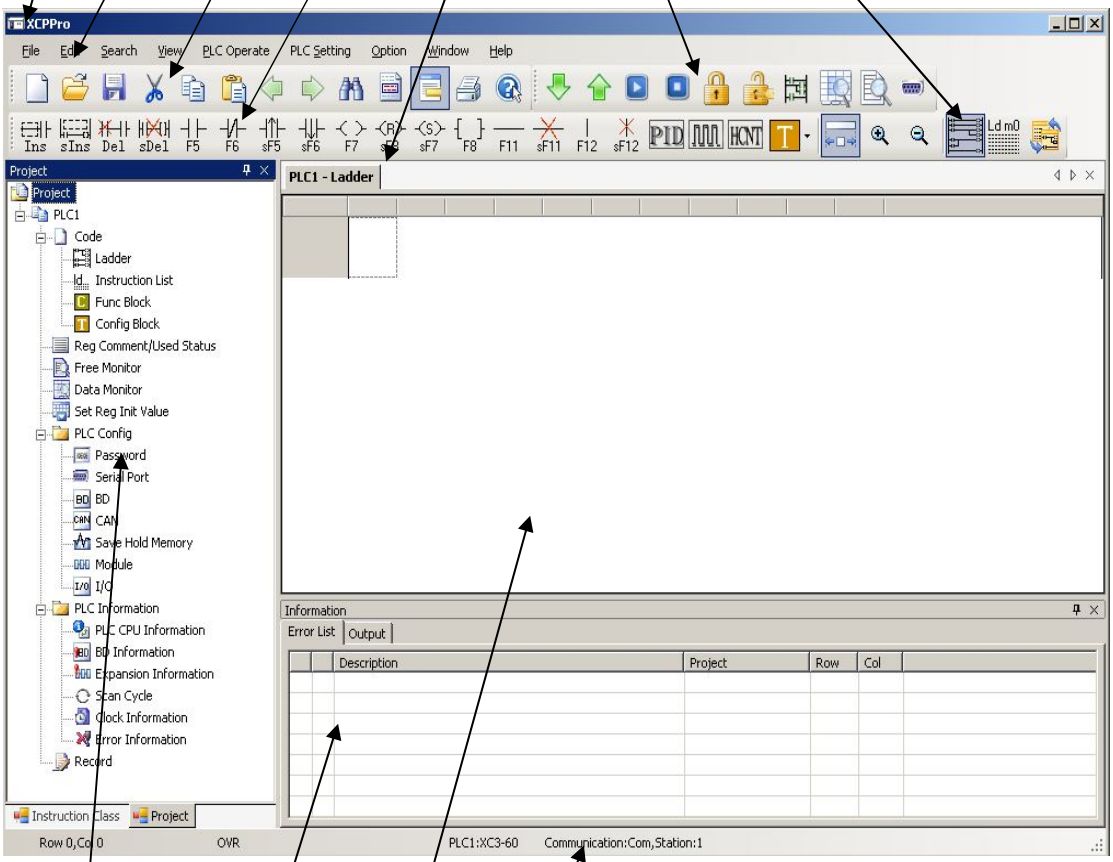
Conventional Toolbar: Diaplay the icons of basic functions,such as copy, search.

Ladder input bar: When input instruction symbol, select the corresponding symbol

Windows switch bar: Switch windows

PLCToolbar：Including upload、download、run、etc.

Other: Including the operation of



Status bar: Show PLC model, communication method,operate state

Edit area: Write program, or input ladder chart.

Information bar: Show error list and output.

Project bar/Instruction bar: Show project catalog and instruction list. The object in project bar is for user's convenient operation, these functions are included in menu bar also.

Note: Each window can adjust place and size at will.

3-2. Conventional Toolbar

	New	New Create a Ladder program
	Open	Open an edited (saved) file
	Save	Save the modified or new created file
	Cut	Cut in the the specified scope
	Copy	Copy within the scope of instruction
	Paste	Paste the cutted and copied contents to a designated location
	Go back	Go back to the region of previous cursor
	Go forward	Go forward to the region of next cursor
	Search	Search the statement or string
	Note	Show node comment
	Instruction tooltip	Instruction tooltip open/close
	Printer	Print the current file
	Help	See related XC instructions for use

3-3. PLC Toolbar

	Download	Download the editing program or data into PLC EMS memory
	Upload	Read the program or data in PLC memory out
	Run	Run PLC
	Stop	Stop PLC
	Lock	Lock program

	Unlock	Unlock program
	Lad monitor	Monitor the operation process of ladder chart program
	Data monitor	Monitor and set state, data of all PLC soft elements
	Free monitor	Monitor and set state, data of specified PLC soft elements
	Software serial port config	Config software serial port

3-4. Ladder Chart Input Bar

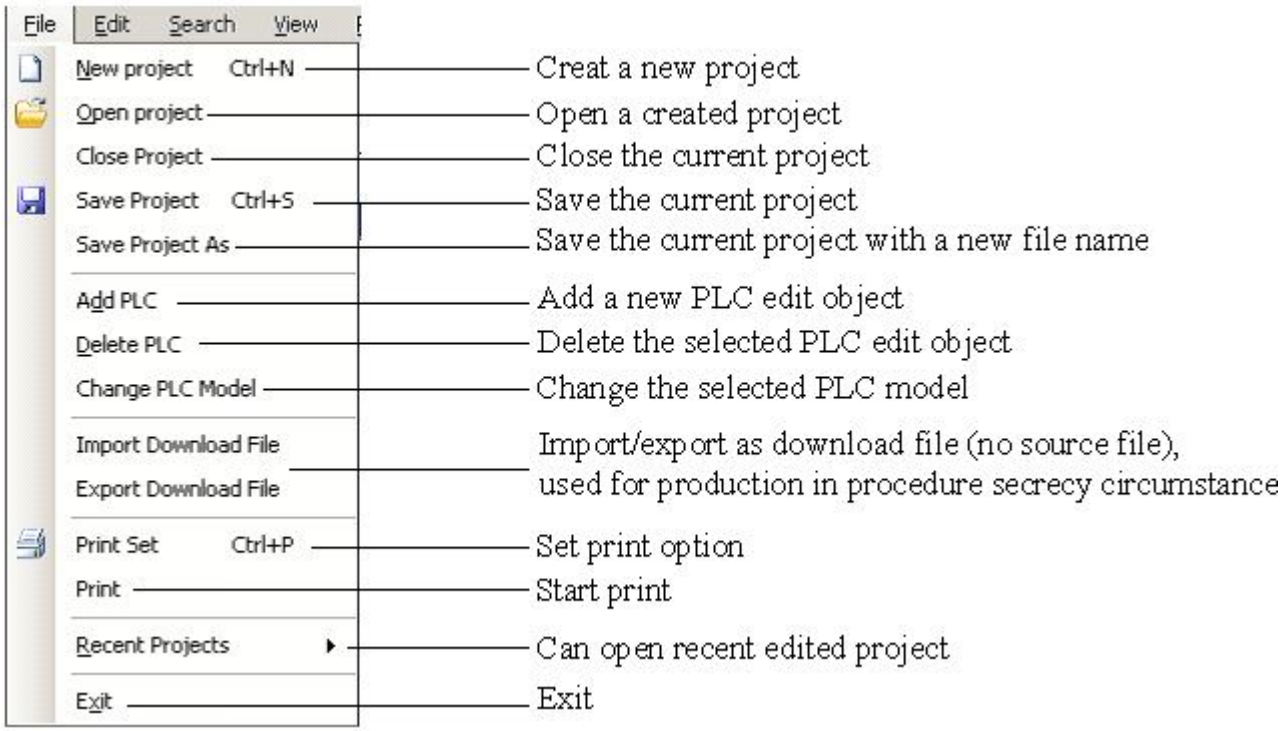
	Insert a node		Set
	Insert a row		Instruction frame
	Delete a Node		Horizontal Line
	Delete a Row		Delete Horizontal Line
	Normally Open Node		Vertical Line
	Normally Closed Node		Delete Vertical Line
	Rising Edge Pulse		PID Instruction Parameter Config
	Falling Edge Pulse		Pulse Instruction Parameter Config
	Out		High-speed Count 24-section Config
	Reset		G-BOX SMS Config

3-5. Other

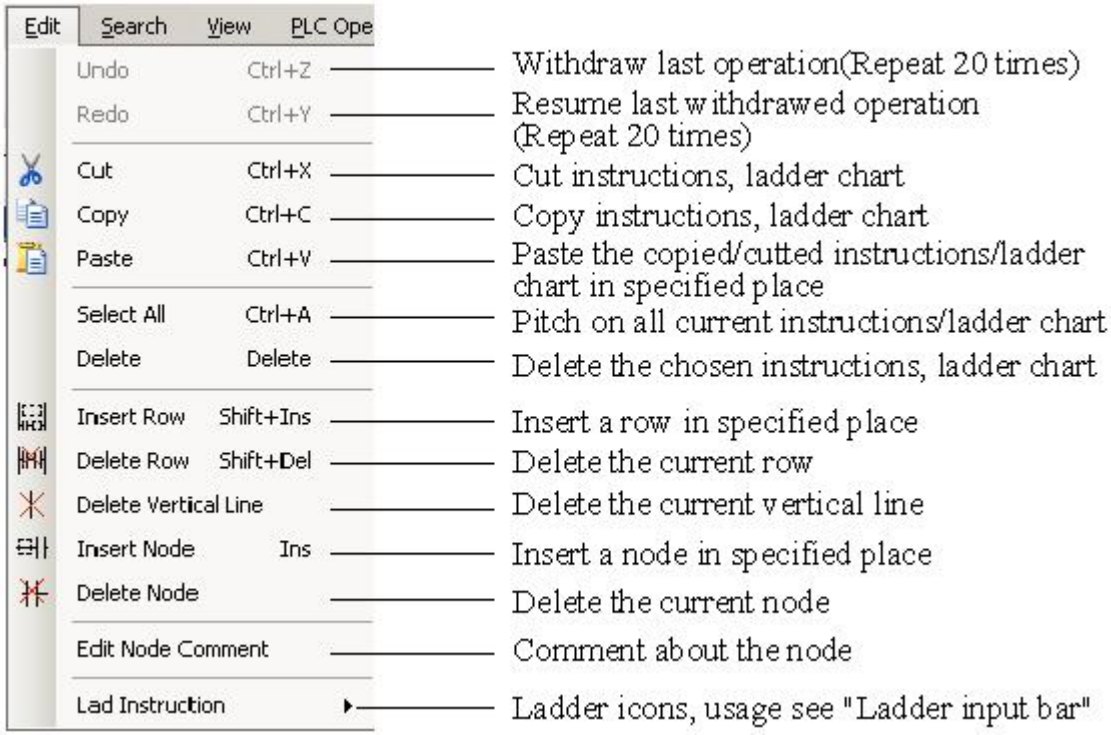
	Auto-adapt Col Width	Auto-adjust col width to a appropriate length
	Zoom In	Zoom in ladder chart
	Zoom Out	Zoom out ladder chart
	To Ladder	Convert instruction list into ladder chart
	To Instruction List	Convert ladder chart into instruction list
	Grammer Check	Check user procedure on grammer

3-6. Menu Bar Introduction

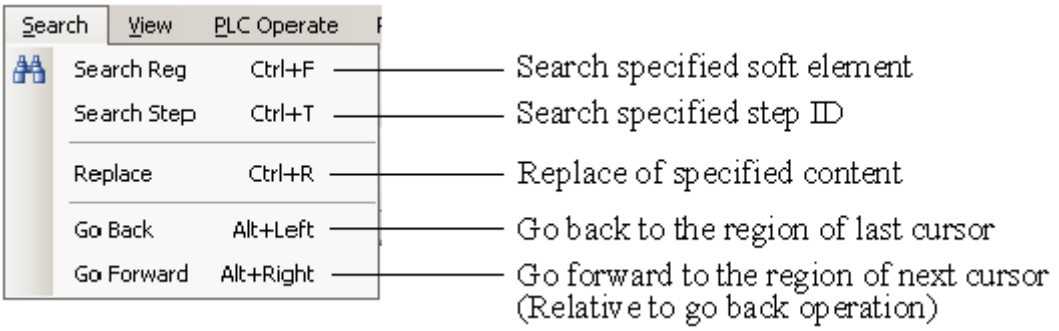
3-6-1. “File”



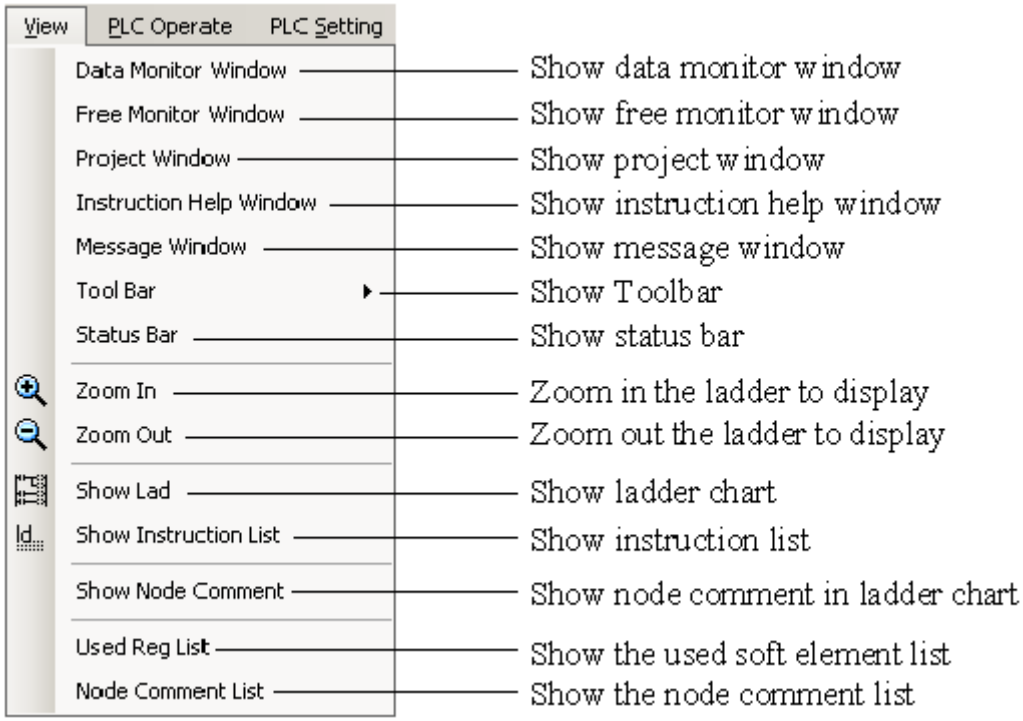
3-6-2. “Edit”



3-6-3. “Search/Replace”



3-6-4. “View”



3-6-5. “PLCOperate”

In the basic operation of PLC, there are several items, listed as below, need attention:

- The usage of secret download

  Please be sure to attention, in order to protect users' intellectual property, after the use of secret download, the program or data in PLC will never be able to upload, and the program is unable to decipher.

- Stop PLC when PLC reboot

  When user program error, bring on as run will not be able to communicate, use "Stop PLC when PLC reboot", make PLC stop as soon as reboot, then can re-download user program.

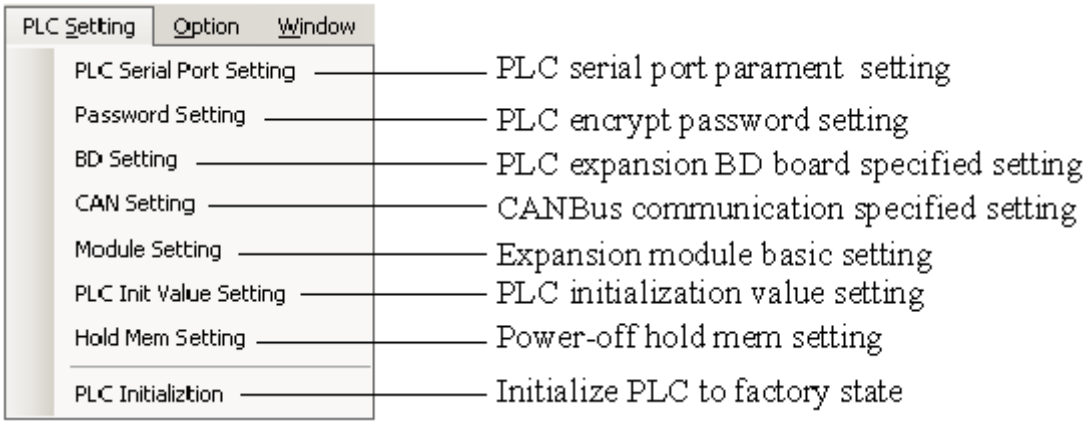
- Lock/Unlock program

  When using the function, first set the user program password, then download, password and program will be download into PLC together. When user want to upload, they need to input password to unlock the PLC at first, then can upload.

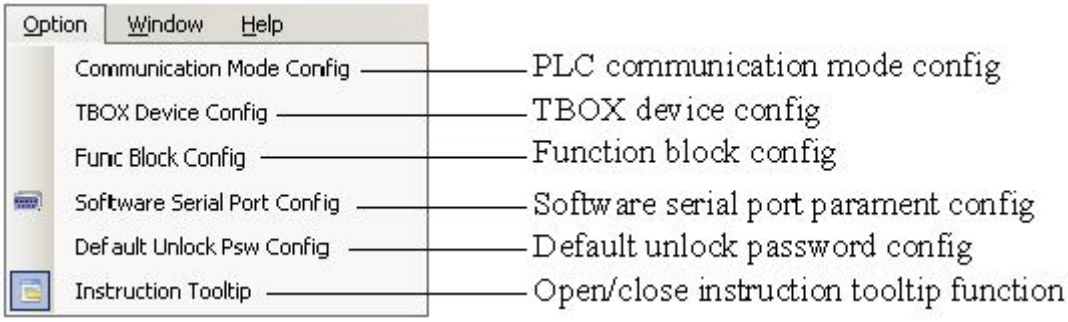
  When PLC with password, it can re-download user program also, cover with the old program. The password is used to protect user program.

Note: Specific PLC information see P29.

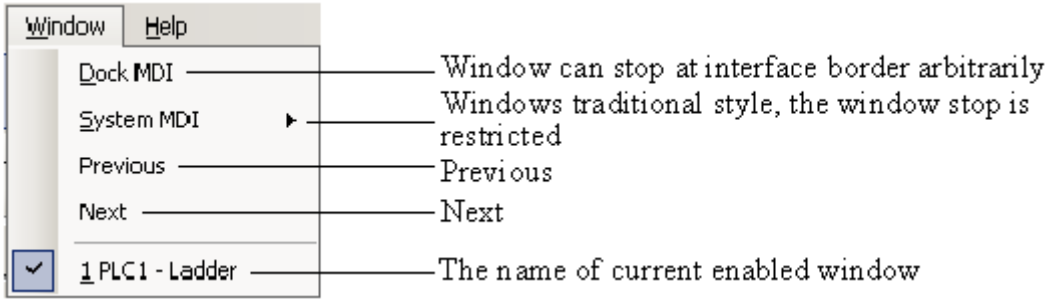
3-6-6. “PLCSetting”



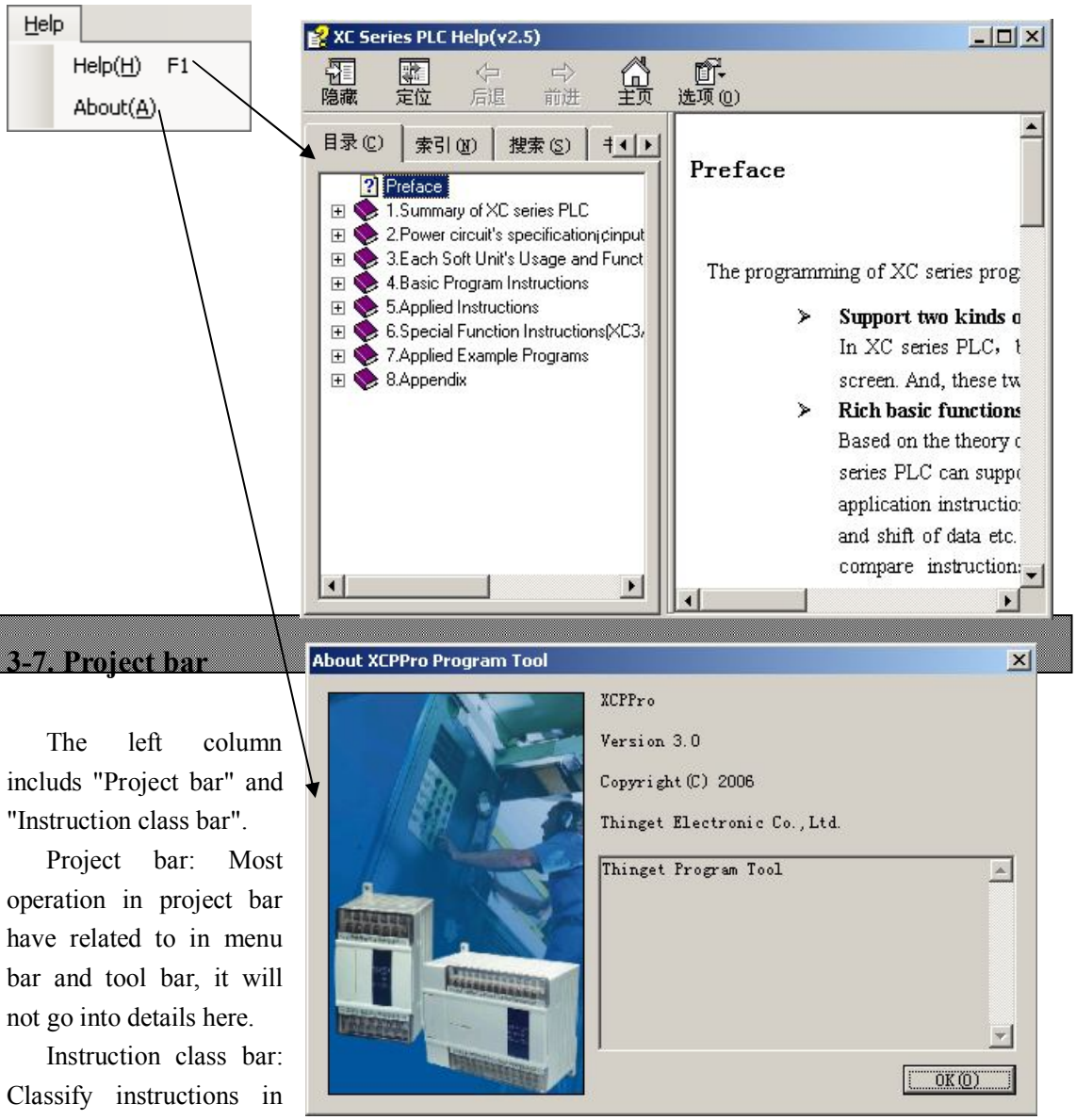
3-6-7. “Option”



3-6-8. “Window”



3-6-9. “Help”

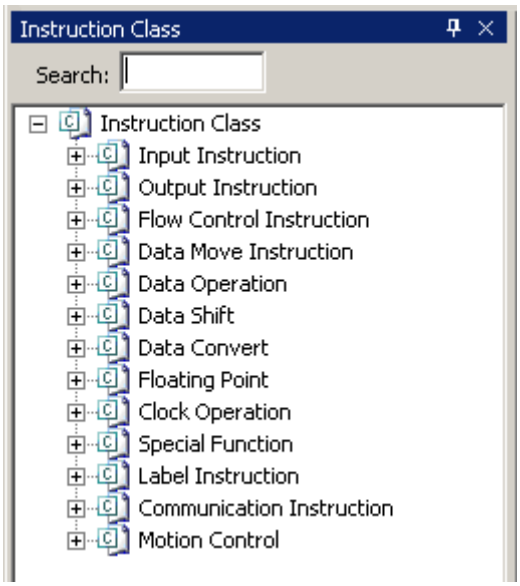


3-7. Project bar

The left column includs "Project bar" and "Instruction class bar".

Project bar: Most operation in project bar have related to in menu bar and tool bar, it will not go into details here.

Instruction class bar: Classify instructions in accordance with the different funcyions, then users can search directly, as follows:



3-8. Shortcut key instruction

Ctrl+N	Creat a new project	Shift+ F6	Falling edge pulse
Ctrl+S	Save project	F7	Output
Ctrl+P	Print config	Shift+ F8	Reset
Ctrl+Z	Undo	Shift+ F7	Set
Ctrl+Y	Redo	F8	Other
Ctrl+C	Copy	F11	Horizontal line
Ctrl+V	Paste	Shift+F11	Delete horizontal line
Ctrl+X	Cut	F12	Vertical line
Ctrl+A	Select all	Shift+F12	Delete vertical line
Delete	Delete	Ctrl+F	Search soft element
Shift+Insert	Insert a raw	Ctrl+T	Sear step ID
Shift+Delete	Delete a raw	Ctrl+R	Replace
Ins	Insert a node	Alt+Left	Go back
F5	Commonly open node	Alt+Right	Go forward
F6	Commonly close node	Ctrl+G	Grammer check
Shift+ F5	Rising edge pulse	F1	Help

4、Simple function realization

This chapter focuses on realization of PLC basic functions, including online, upload/download program, run/stop PLC, upload/download data, specified information search, PLC initialization, lock/unlock program, print, etc.

4-1．Online

4-2．Upload/download program, and PLC status control

4-3．Set PLC initialize value, upload/download data

4-4．PLC and module information enquire

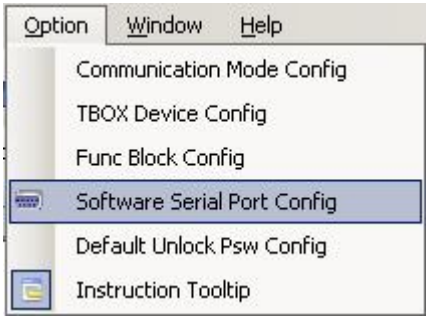
4-5．PLC initialization

4-6．Lock/Unlock program

4-7．Print

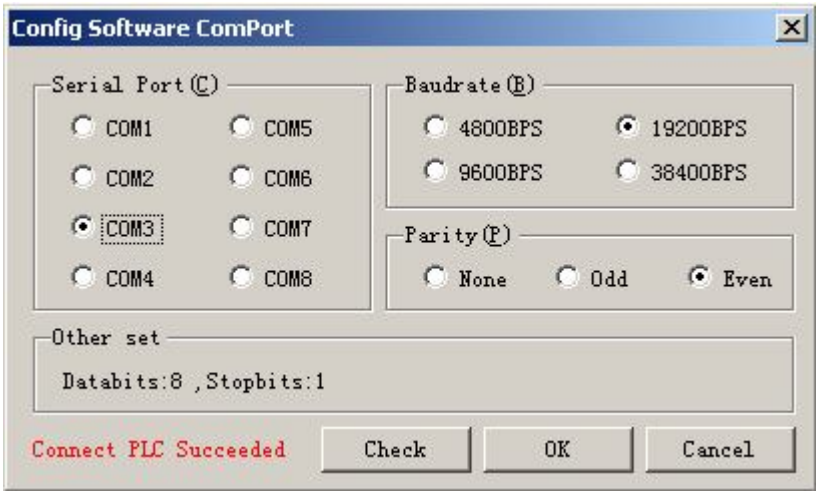
4-1. Online

1、 Click menu bar, "option"→"software serial port config", or click icon " "。

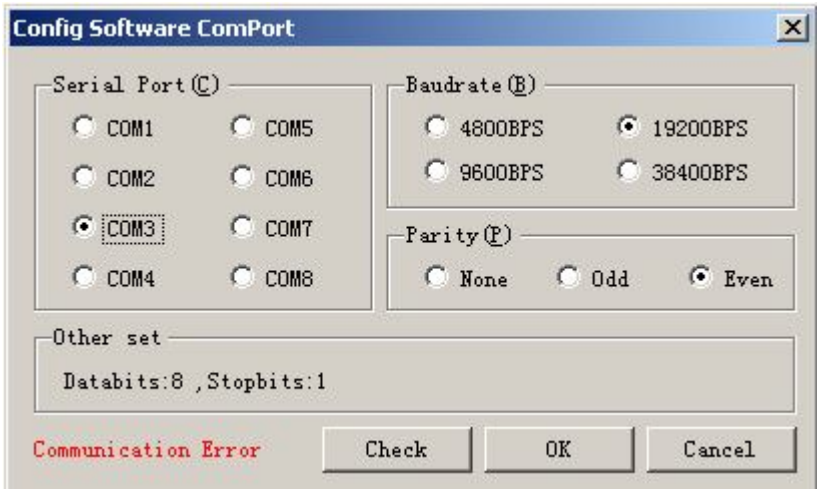


2、In "Config Software ComPort" window, choose correct serial port, baudrate, parity, or click "Check", software will check and set correct serial port, baudrate, parity automatically.

3、When red word "Connect PLC Succeeded" showing in the left bottom of "Config Software ComPort" window, online success, connect succeed, check "OK", continueother operations.



4、When online unsucceeded, "Communication Error" will show in red word in the left bottom of "Config Software Comport" window, please check computer comport, communication cable and PLC communication port.

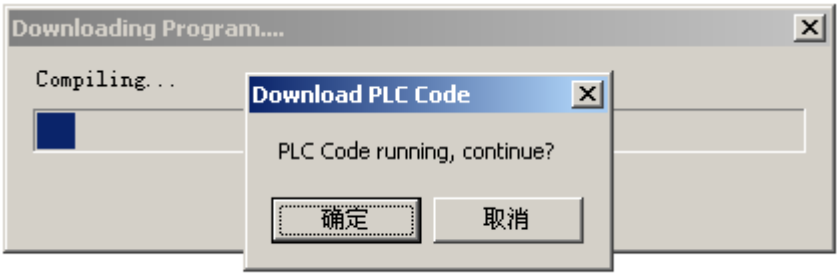


4-2. Download/Upload program, PLC state control

1、When online succeeded, click "PLC operation" in menu bar→ "upload program&data ", or click

" " icon, can upload the PLC program. Click "project" in menu bar→ "save project", or " " icon, can save program.

2、When online succeeded, click "PLC operate" in menu bar→"Download Program & Data", or click icon, the program can download into PLC. If PLC is running, the "stop running PLC" window will pop up.



Choose "OK", PLC stop run, download new program. While downloading, the guage pop up.

After download program, click button to run PLC.

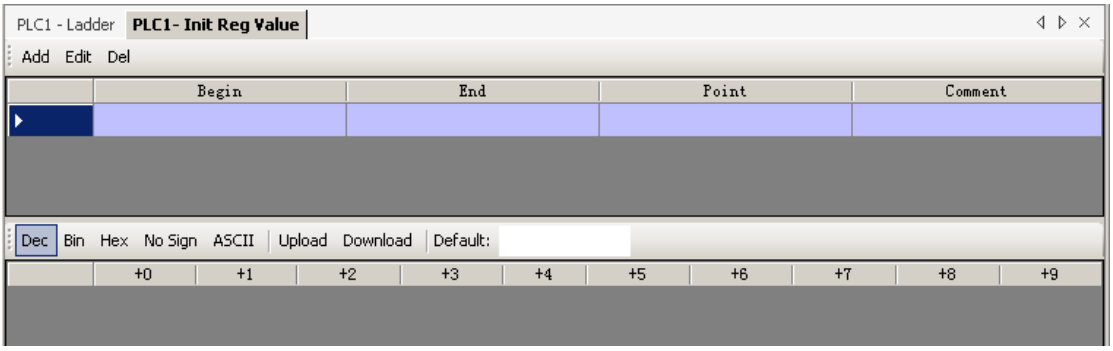
3、State control

After online, click button to run PLC; click button to stop PLC.

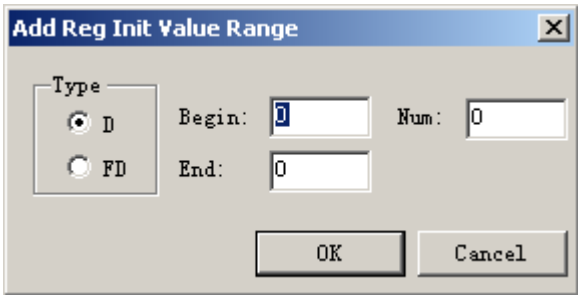
4-3. Set PLC initial value, upload/download data

4-3-1. Initial value settings

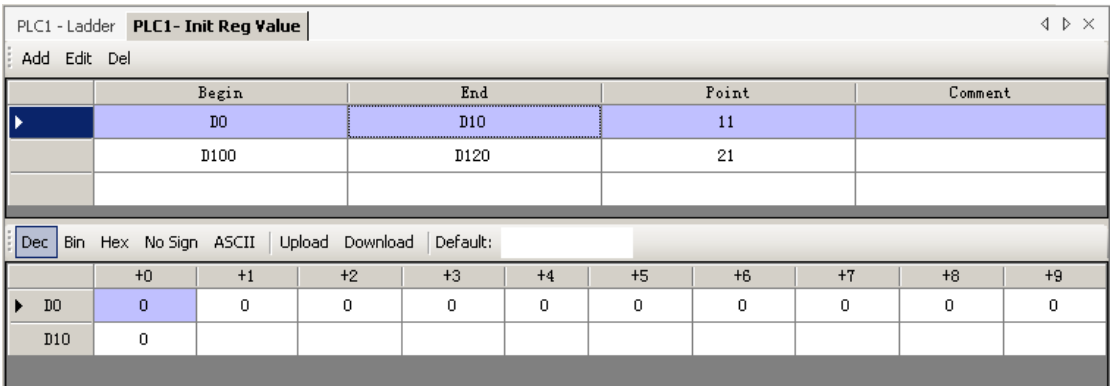
Click "Set Reg Init Value" in project bar, the "Init Reg Value" window will pop up.



- "Upload":Upload the data of PLC soft element; "Download": download the set value into PLC.
- The numerical value can switch between "decimal","binary","hexadecimal","no symbol","ASCII".
- Add soft element: Click "add" button, "Add Reg Init Value Range" window pop up, choose register model 'D' or 'FD', then set begin and end address.



The below chart is the initial value settings of adding two registers, double-click address ID, modify numerical value.



4-3-2. Upload/Download data

Method 1: If the operation object is a part of address, set initial value at first, then click "upload"、"download" button.

Method 2: If operation object is the whole address, click "PLC operate" in menu bar→"Upload data","Download data".

4-4. PLCand module information enquiry

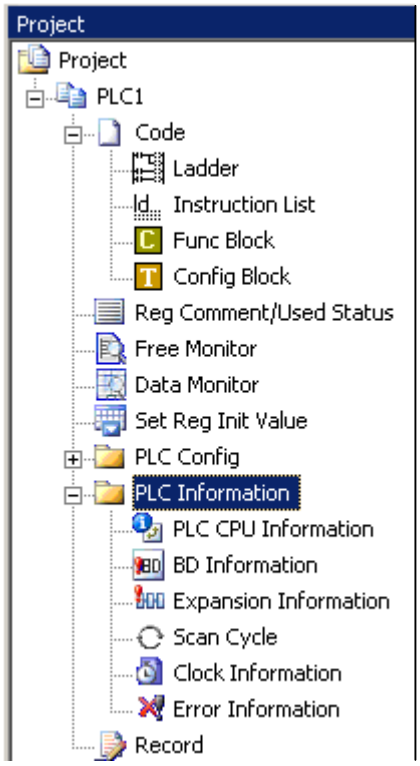
Method1:

① Click "Project column"→"PLC information", a catalog will appear;

② Click "PLC main unit information","BD board information", "expansion module information","scan cycle","error information" on the respective,then you can see corresponding information.

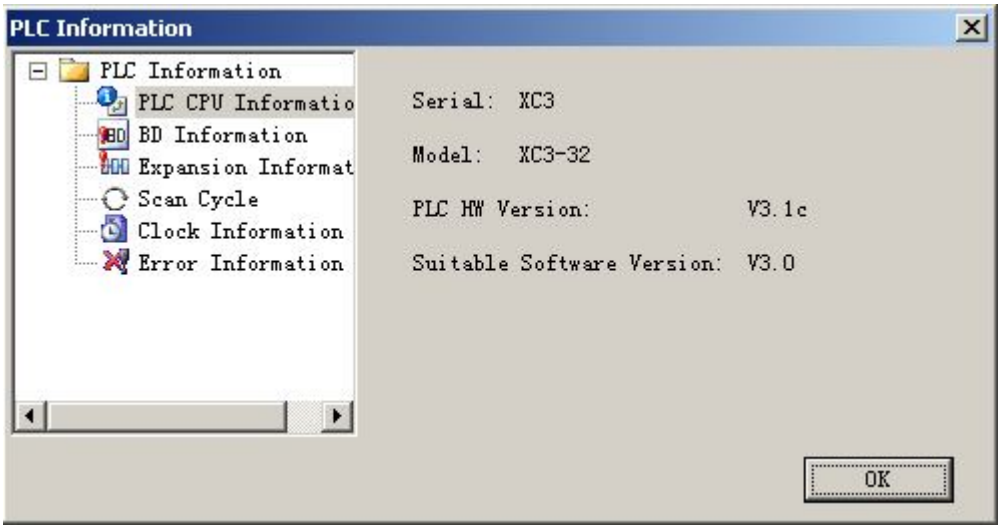
Method 2:

Click correlative items in the left side, "Project culumn"→ "PLC information", to view directly, shown as right.



4-4-1. PLC main unit information

Show PLC series, model, slave version and befitting master version.

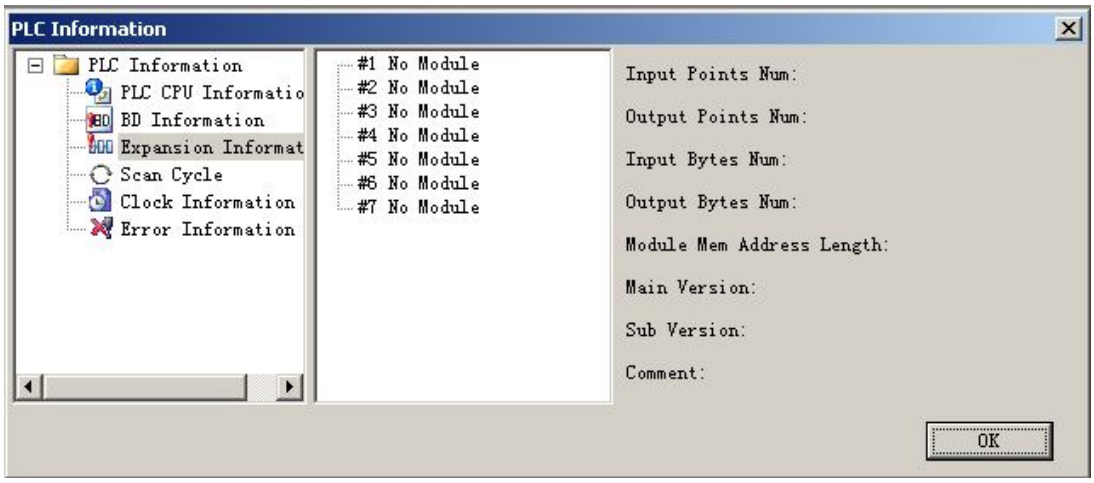


4-4-2. BD board information

Show BD input/output points, input/output bytes, primary/secondary version, and BD board name.

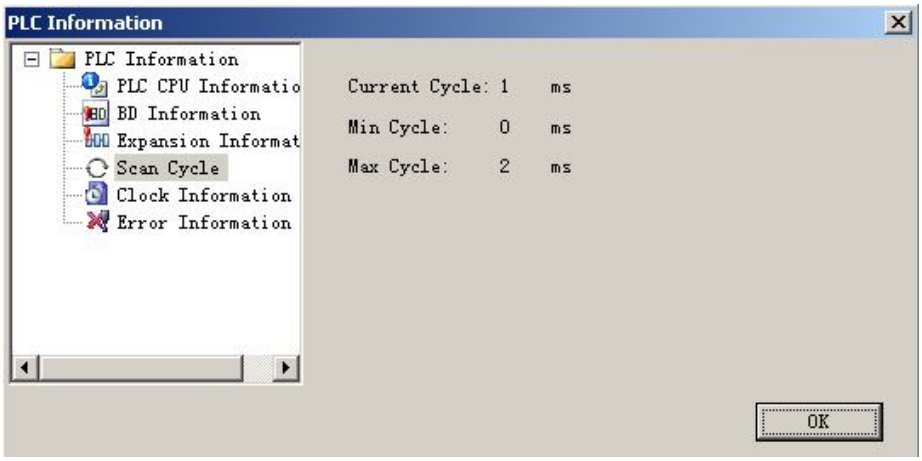
4-4-3. Expansion module information

Show module information (content as BD board).



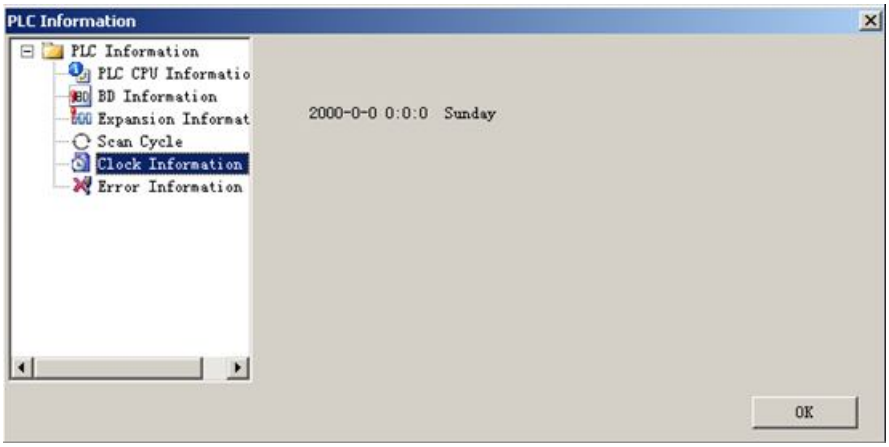
4-4-4. Scan cycle

Show current cycle, Min/Max cycle of ladder chart program.



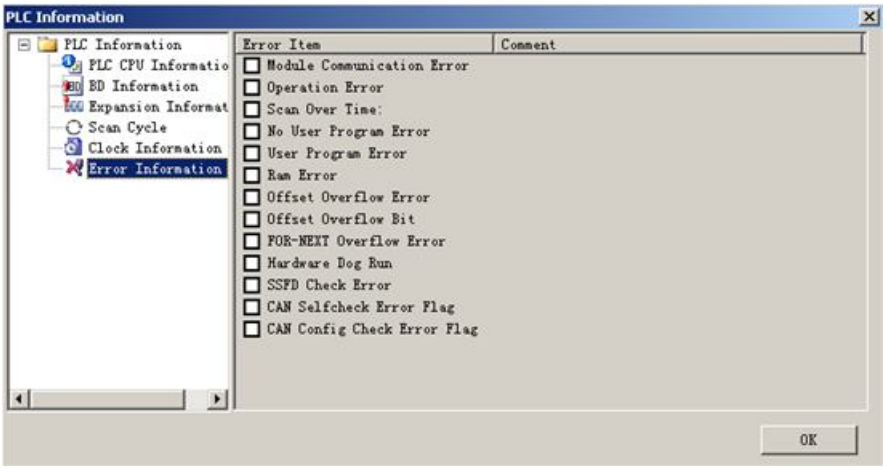
4-4-5. Clock information

Show current clock date information.



4-4-6. Error information

Show compilation error information.



4-5. PLC Initialization

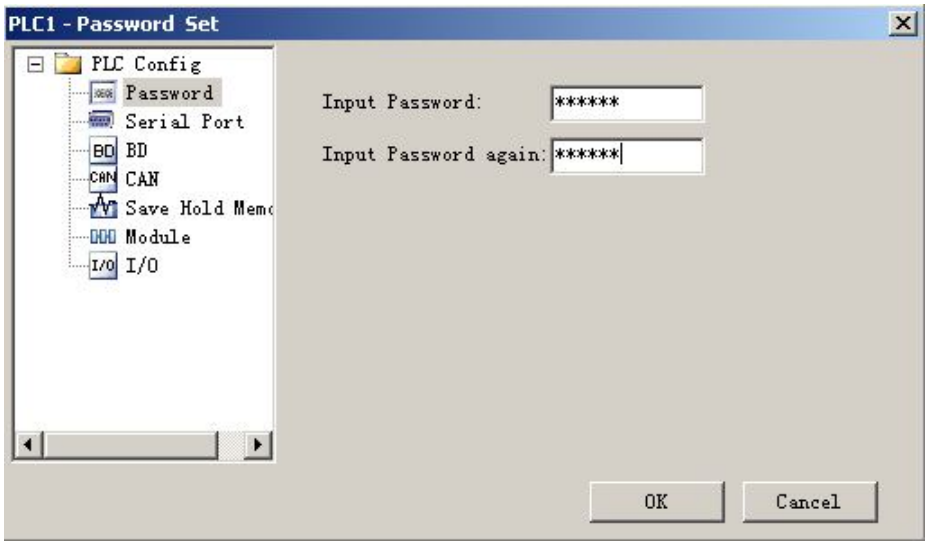
Choose "PLC setting" in menu bar→"PLC Initialization", PLC will be initialized to leave factory settings.

4-6. Lock/Unlock program

When password setted, the PLC program cannot be read out in lock state, in order to protect program. If repeatedly enter password error, PLC will blockade password automatically. Here, PLC need a re-electrify, then can open password and upload.

4-6-1. Password settings

Click "PLC setting" in project bar →"Password", or "PLC config" in menu bar→"password", tthe password can be set and modified. Password is make up of 6 letters/numerals.The system default for six zero, that is no password.



4-6-2. Lock/Unlock

When password set succeeded, click icon to lock the current PLC. So in the process of upload the PLC program, only enter corret password, the program can upload successfully; click icon to unlock the current PLC, the program can upload in normal.

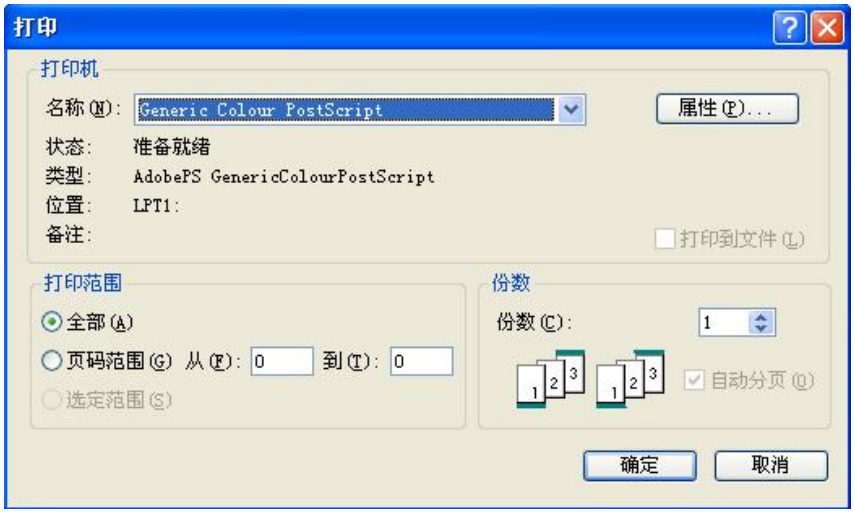
4-6-3. The default password decryption settings

To menu bar"Option"→ "Default Unlock Psw Config", set unlock password.

In the process of using secreted PLC, if need to upload procedure frequently, or enter different passwords to different secreted PLCs, users can set default decryption password. As shown above, users can set a number of decryption password. Then in the upload process, no need to enter password repeatedly.

4-7. Print

Click "File"→"Print", the print config window will pop up, the program can be printed in ladder chart or instruction mode.



Print object:

① Ladder chart, command, note;

② Print all or part (separated with cursor), all is allowed.

Print settings:

① Choose printer

② Print range

③ Print amount

5、Programme operation

This chapter focuses on the introduction in the XCP Pro programme environment, including method, configure and idiographic operation process, which may be involved in a wide variety of programme.

5-1. Programme mode

5-2. Instruction sign input

5-3．Ladder chart edit

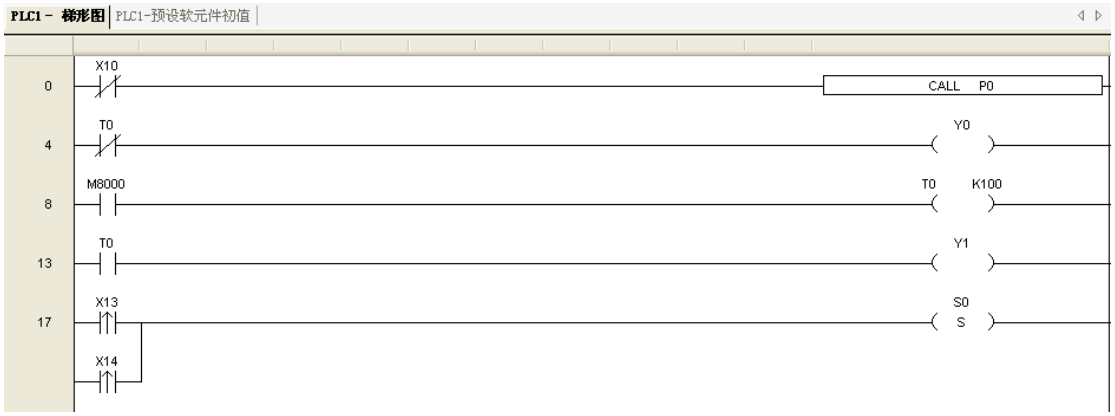
5-4．Correlative configure

5-5．Sofe element monitor

5-1. Programme mode

XCPPro can program in two methods: ladder chart programme or repertoire programme.

ladder chart programme: intuitionistic and convenient, is chosen by the majority of PLC programme and maintenance personnel.



Repertoire programme: suit for the personnel who is familiar with PLC and experienced in logic programme.

PLC1 - 命令语 | PLC1-预设软元件初值

```
0     LDI     X10
2     CALL    P0
4     LDI     T0
6     OUT     Y0
8     LD      M8000
10    OUT     T0      K100
13    LD      T0
15    OUT     Y1
17    LDP     X13
19    ORP     X14
21    SET     S0
23    LDP     X12
25    RST     T1
27    RST     T0
29    STL     S0
31    LDI     T1
33    OUT     Y2
35    LD      M8000
37    OUT     T1      K50
40    RST     Y1
42    LD      T1
44    OUT     Y3
46    STLE
47    FEND
48    P0
50    LD      M8000
52    OUT     Y3
54    LDP     X12
56    RST     Y3
58    SRET
59    LD      M8000
61    PLSR    D0      D2      D4      Y0
66    OUT     C600    D10     D100
```

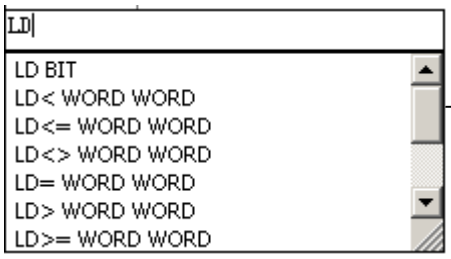
5-2. Input instruction

5-2-1. Instruction prompt

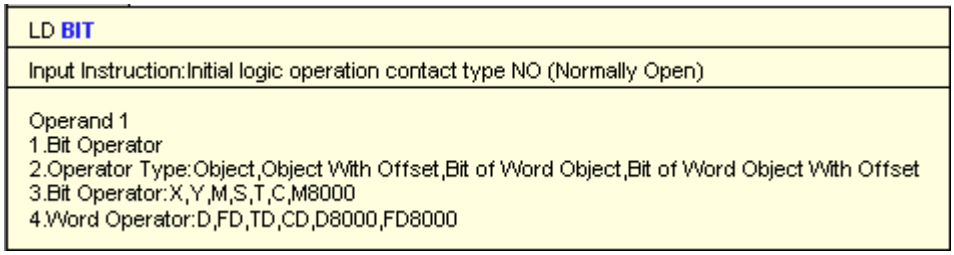
When users write instructions in ladder chart mode, they can open instruction prompt function via

click " " icon. In manual input state, the system will automatically list correlative instructions for users to choose, and put up choice tips on operand, to help users quickly and correctly complete the instruction input.

For those not familiar with the directive of the user's operation.



Shown as the left figure, when input "LD", the system will pop up instructions start with "LD", convenient for users' operation who is not faniliar with the instrutions.


LD BIT
Input Instruction:Initial logic operation contact type NO (Normally Open)
Operand 1
1.Bit Operator
2.Operator Type:Object,Object With Offset,Bit of Word Object,Bit of Word Object With Offset
3.Bit Operator:X,Y,M,S,T,C,M8000
4.Word Operator:D,FD,TD,CD,D8000,FD8000

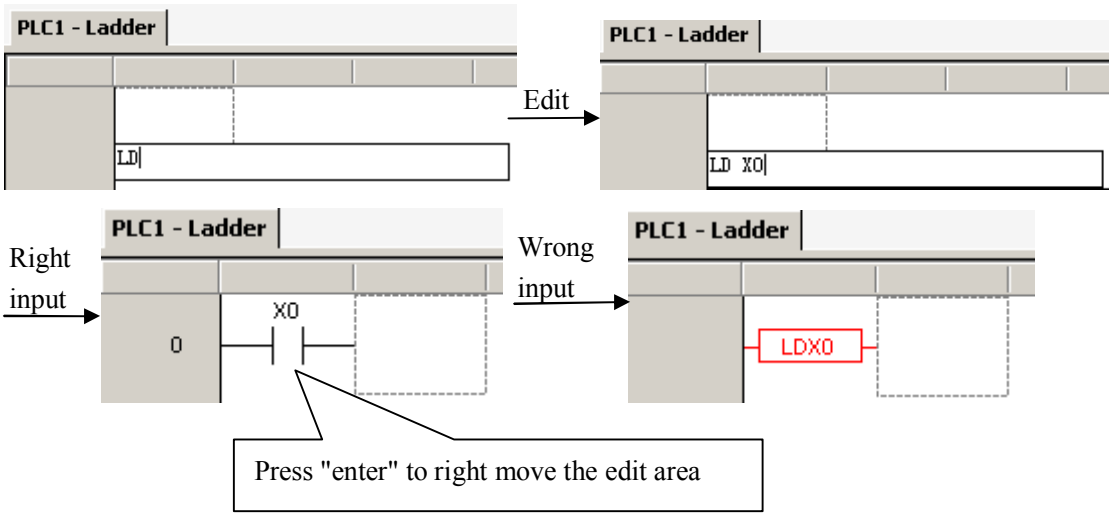
After instruction comfirmed, the system will put up correlative prompt on operand, such as operand attribute, available address type, etc.

5-2-2. Input node

Icon	Function	Shortcut key
	Commonly open node	F5
	Commonly close node	F6
	Rising edge	Shift+F5
	Falling edge	Shift+F6

Take example to explain the instructiom input:

Mouse left bond click a certain node in ladder chart, the display area in dotted line box denote the chosen node; first click " " icon (or press F5 key), the figure will show a dialog box (LD M0), it can edit instruction and loop in dialog box. When edit finished, press "Enter" button, if input error, then the node will show in red. Double-click the node, user can afresh input operation.



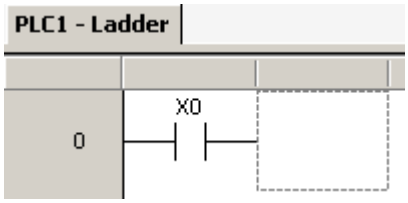
5-2-3. Input loop

Icon	Function	Shortcut key
F7	Output loop, timer and counter	F7
sF7	Set loop	Shift+F7
sF8	Reset loop	Shift+F8
F8	Edit instruction	F8

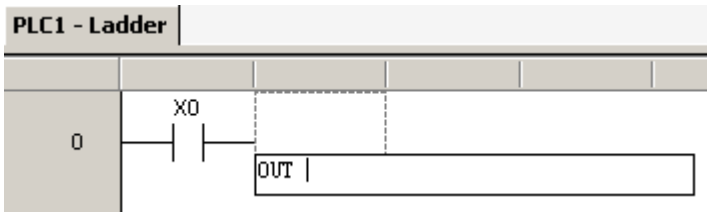
Next take example to explain the instruction input:

Ex1: Loop output

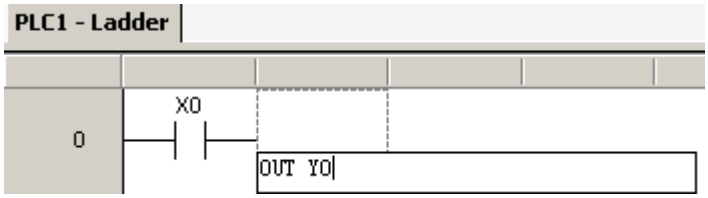
① After the ladder's first node X0 input, the dotted line box right move a lattice;



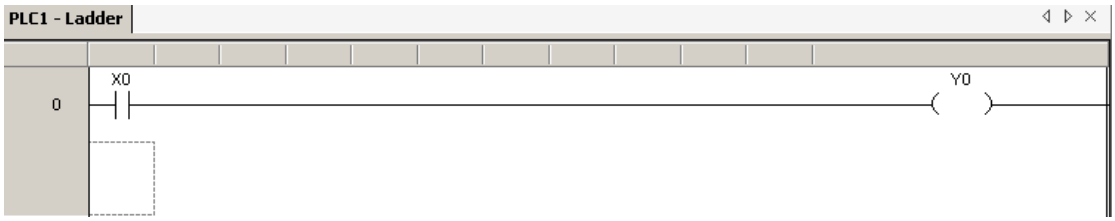
② Click " " icon (or press F7 key), the instruction dialog window pop up (OUT);



③ Input Y0 in the cursor place;

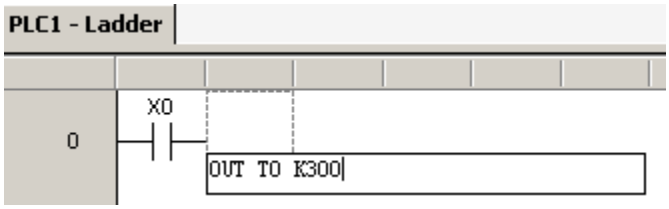


④ Press "Enter" key, if input correct, then dotted line box move to the next row; if not, the node will show in red, double-click the node to modify.

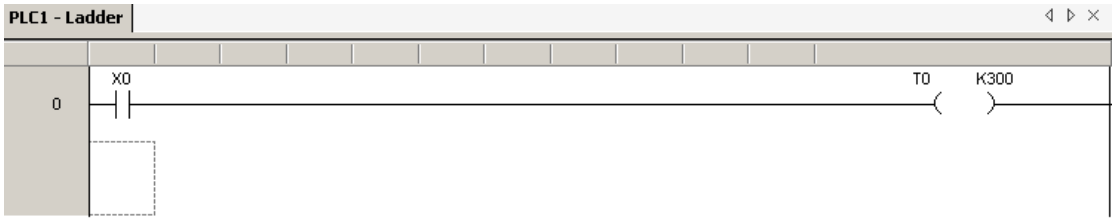


EX2: Timer and cunter input

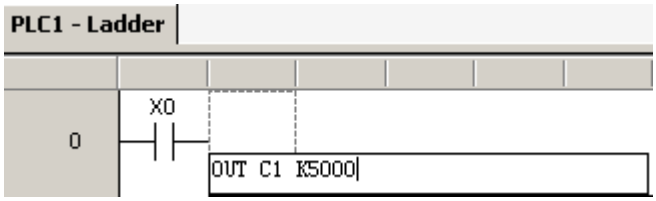
① The input method of timer: OUT+Timer number+blank+timing hour



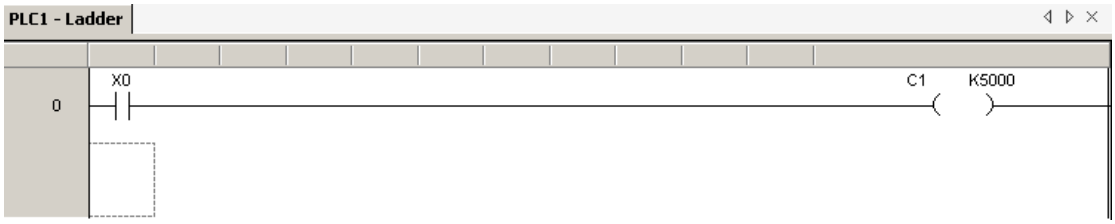
Aftere input correct, press enter, then dotted line box line wrap.



② Counter input mode: OUT+blank+counter number+blank+count value

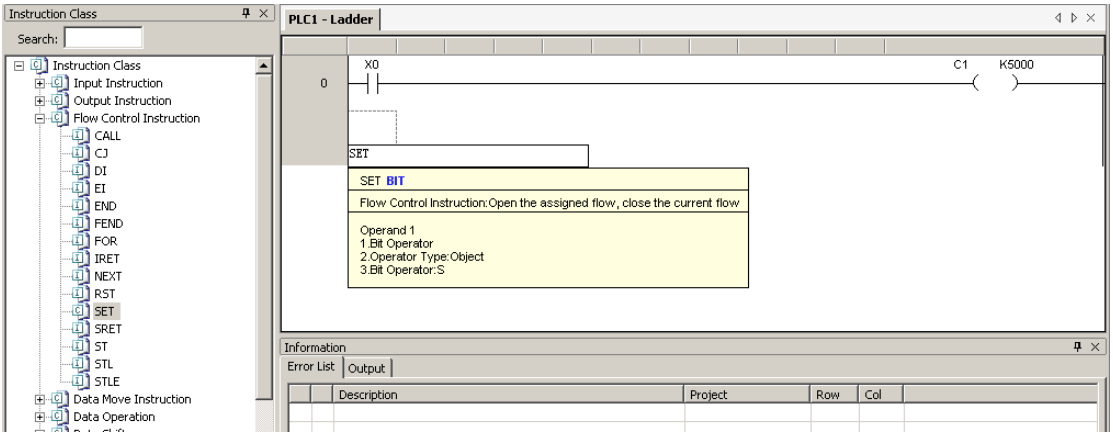


After input correct, press enter, then dotted line box line wrap.



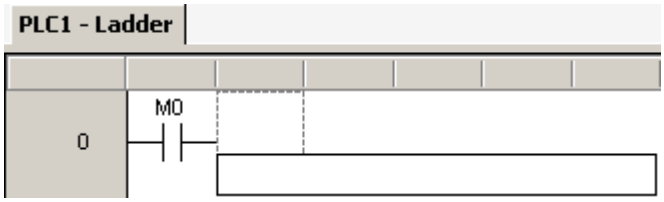
Ex3: Other instruction input

① Click "F8" icon (or press F8 key), left side column show instruction list; douvle-click the input instruction, the instruction is activated in appointed area, input parameter.

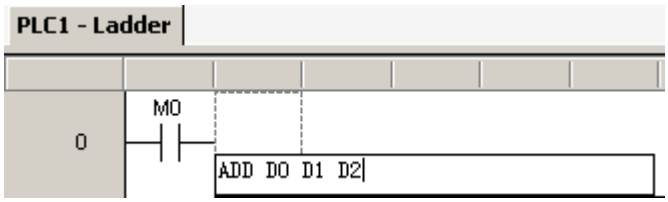


② Users who are familiar with instructions can double-click input area, manually input instructions and parameters;

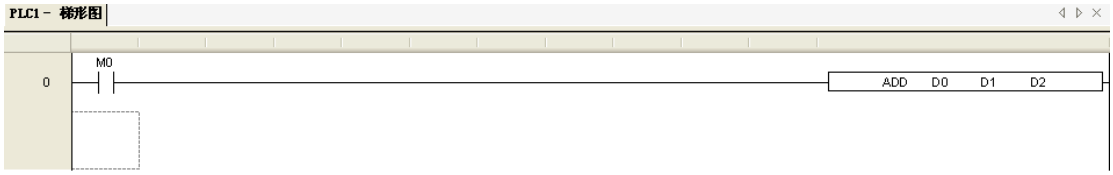
Double-click the activated area:



Input instruction and operand in dialog box.



③ Aftere input correct, press enter, then input area line wrap.



Notice:

- Instruction input mode: instruction + blank + operand.
- The red node means it's error.
- Pay attention to connection, make sure it's integrated.

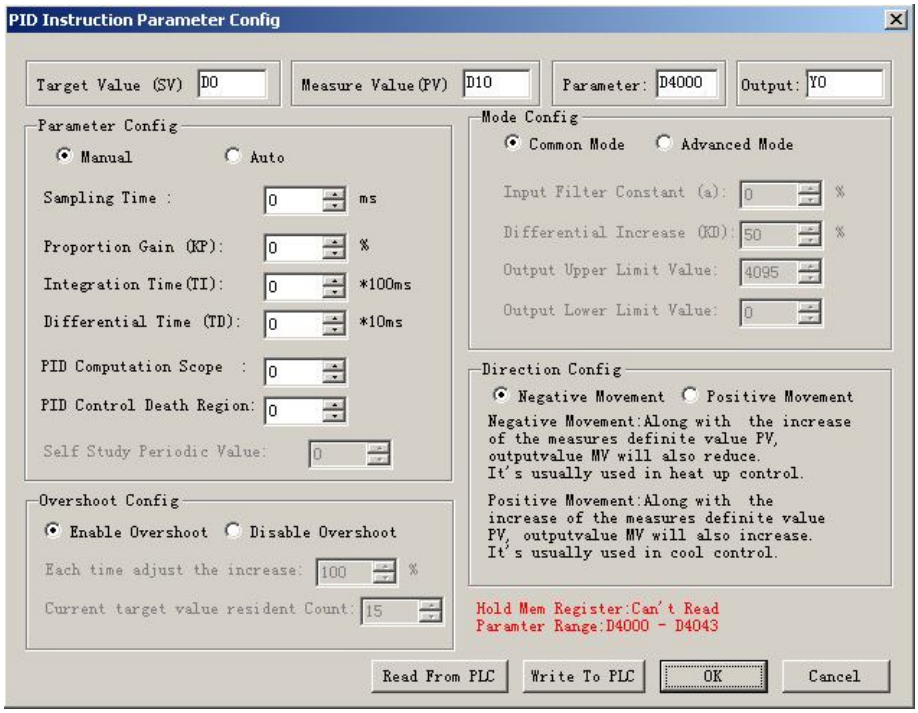
5-2-4. Special instruction

The several instructions mentioned below, can lead user to complete correlative instruction set through icon in dialog box rormat at a glance, the parameter settings is more clear.

1、 PID instruction

- Parameter settings and instruction transfer

Put the cursor in instruction input point, then click "PID" icon in instruction bar, the parameter set dialog box pop up, the setting item include address, PID parameter in common use, mode settings, overshoot, direction, etc. As follows:



After the set of parameter, click "OK", the instruction appear in the ladder chart window, as follows:

- Parameter modification

To edit parameters, double-click the instruction to modify address, other parameters canbe modified through free monitor manually, can also click on

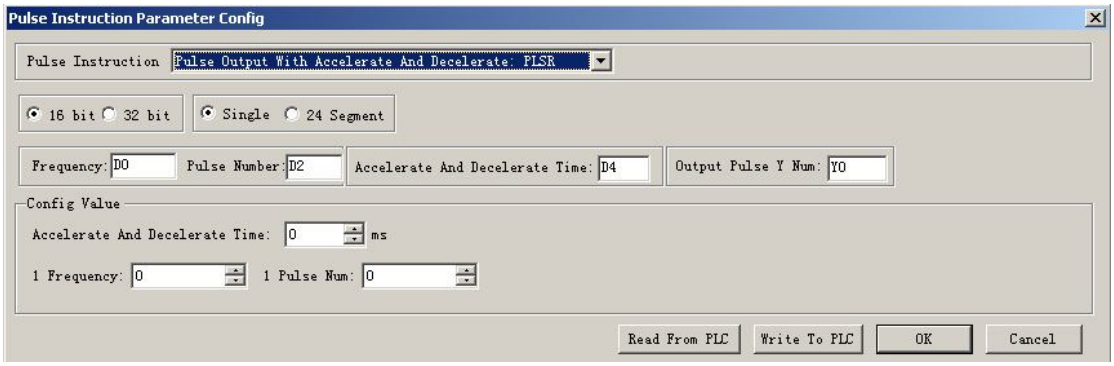
To edit parameters, double-click on the directive to address changes to other parameters can be modified through free monitor manually, can also click on the instructions, then click on "PID", to modify parameters.

2、Pulse output instructions

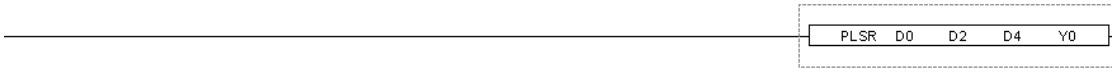
- Parameter settings and instruction calling

Posit cursor to instruction input point, then click "" icon in instruction bar, parameter setting dialog box poop up, the set items include instruction kinds, bit, segment, frequency,

accelerate and decelerate time, config, adress, etc. As shown below:



When parameter settings completed, click "OK", instruction will present to the ladder chart area, shown as follows:



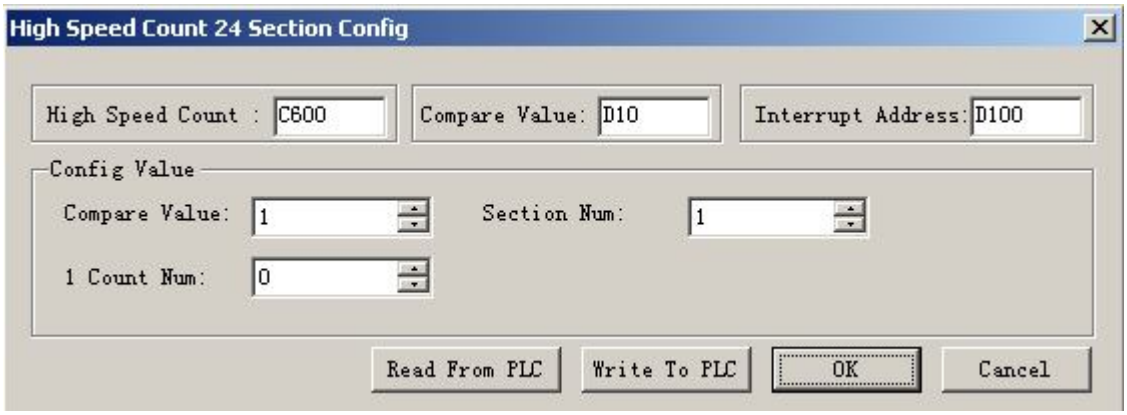
- Parameter modification

When modify parameter, double-click the instruction to modify address, other parameter can be modifed in free monitor manually. It can also single-click the instruction, then click "" to modify parameter.。

3、High speed conter 24-segment instruction

- Set parameter and call instruction

Make the cursor position to input point, then click "HCNT" icon in instruction bar, parameter config box pop up. The config items include high speed count, campare value, 24-segment config value, etc. As shown below:



After parameter setted, click OK, instruction appear in ladder chart appointed area, sa shown below:

- Parameter modification

When modify parameter, double-click the instruction to modify address. You can modify other parameter via free monitor manually, and also can click the instruction first, then click "HCNT" to

modify parameter.

4、The G-BOX SMS configuration

When XCP Pro connect with G-BOX successfully, you can do SMS config.

- Parameter config and instruction call

Click " " icon in instruction bar, dialog box pop up, the config parameter include instruction name, COM port, phone number, first address, SMS content, as shown below:

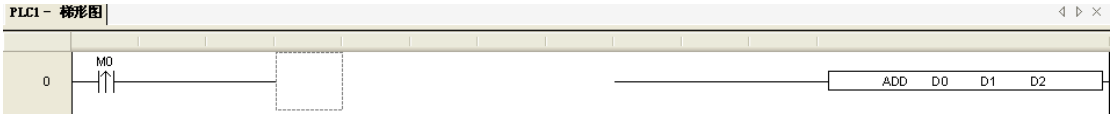
5-3. Ladder chart edit

5-3-1. Horizontal line and vertical line operation

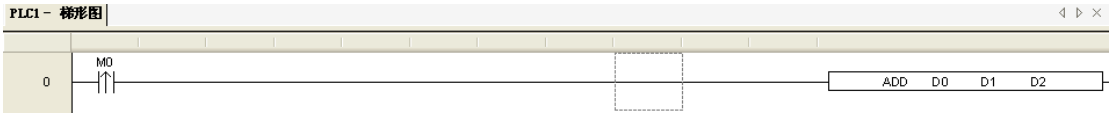
Icon	Functions	Shortcut key
	Insert horizontal line	F11
	Insert vertical line	F12
	Delete horizontal line	Shift+F11
	Delete vertical line	Shift+F12

➢ **Insert horizontal line and vertical line**

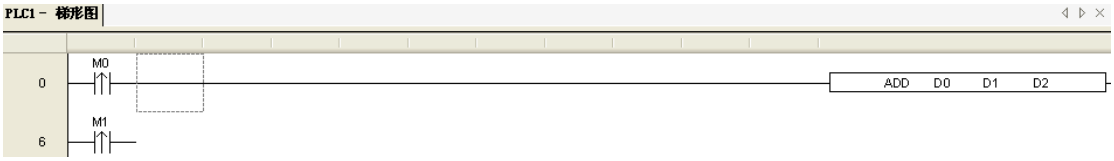
① Move the dotted line box to input place



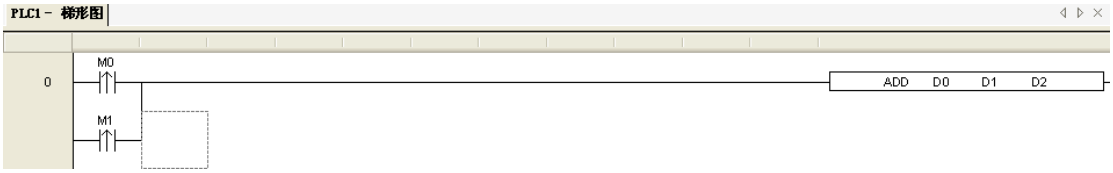
Click （or press F11 key）。



②Move the dotted line box to upper right of the input place



Click （or press F12 key）



➢ **Delete horizontal line and vertical line**

① Delete horizontal line: Move the dotted line box to delete place, click （or press Shift+F11 key）.

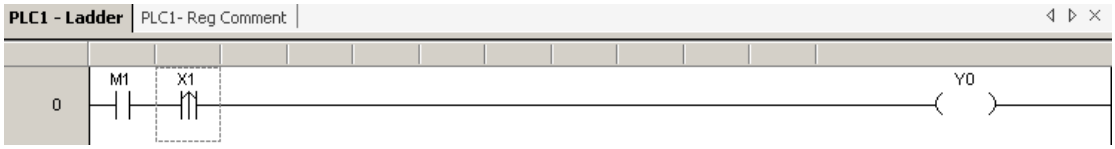
② Delete vertical line: Move the dotted line box to upper right of the delete place, click （or

press Shift+F12 key）.

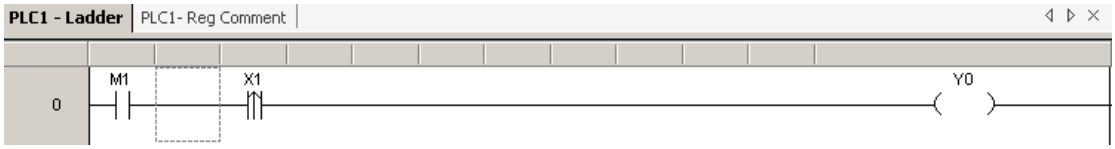
5-3-2. Node and row operation

Icon	Function	Shortcut key
	Insert node	Ins
	Insert row	Shift+Ins
	Delete node	Del
	Delete row	Shift+Del

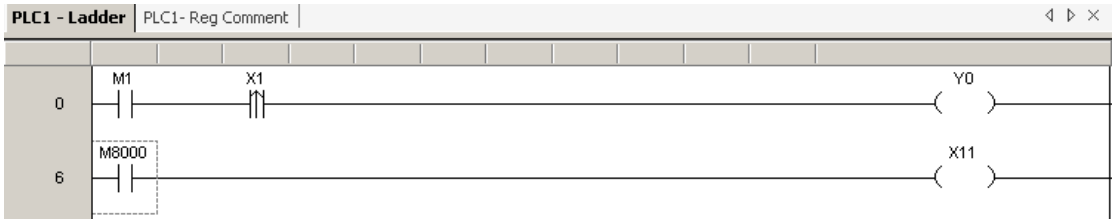
- **Insert node:** move the dotted line box to input place.



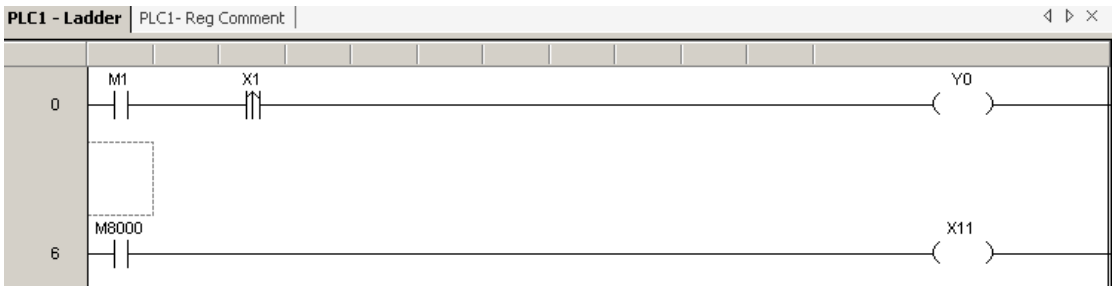
Click （or press Ins key），node right extension, a blank line appear in dotted line box.



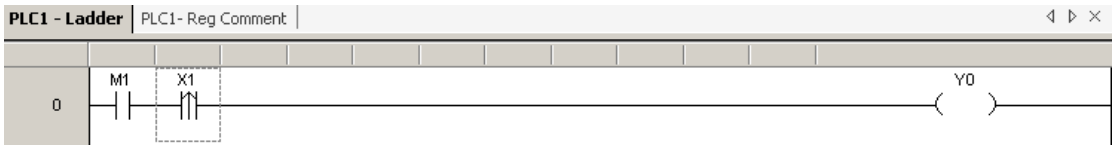
- **Insert row:** move the dotted line box to input place.



Click （or press Ins key）, ladder chart down move a row, a blank row appear in dotted line box.

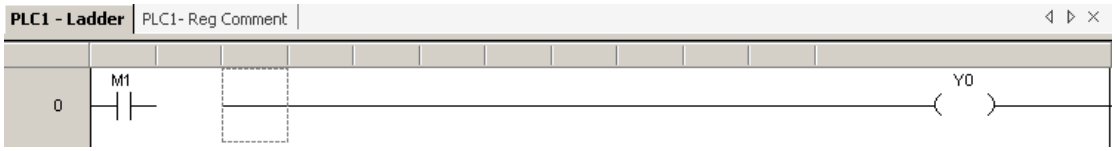


- **Delete node:** move the dotted line box to input place.

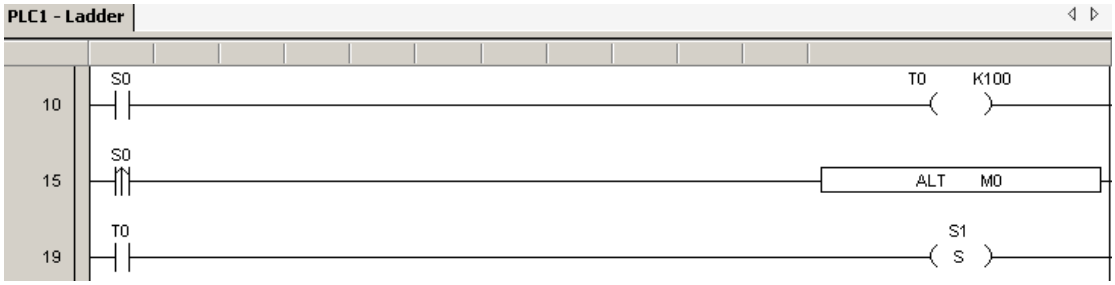


Delete

(or press Del key), dotted line box right move a line, a blank line appearance.

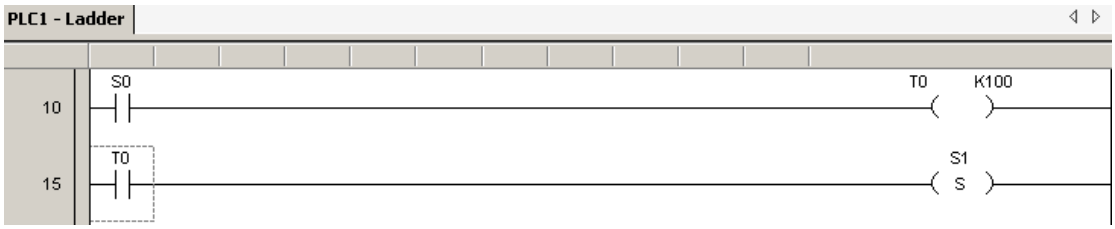


- **Delete row:** move the dotted line box to input place.



Click

(or press Shift+Del key), the row of dotted line box is deleted, the next row up move a row automatically.

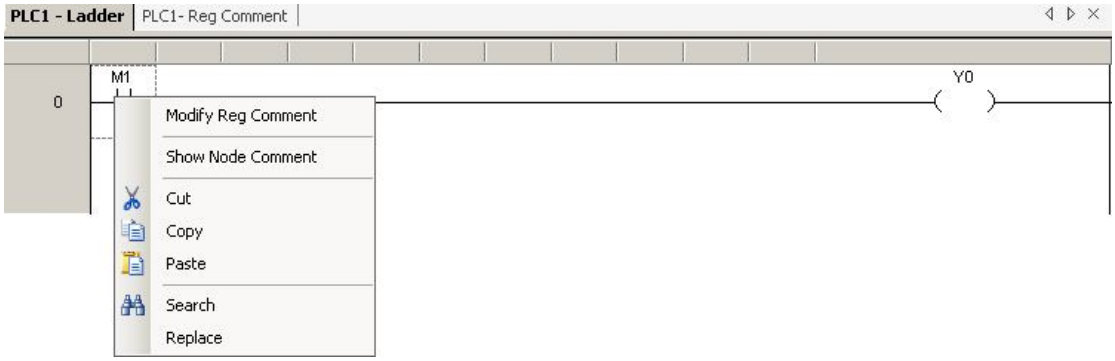


5-3-3. Edit comment

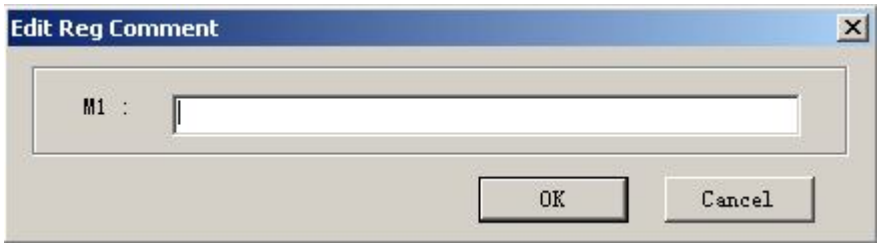
Click "view" in menu bar→"show node comment", then you can do operation of display and close ladder chart node comment.

1、Add soft element comment

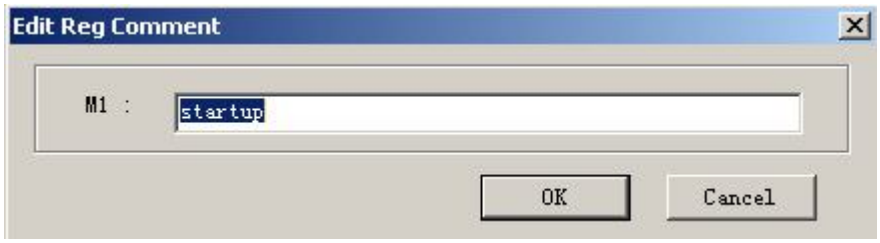
① Move the dotted line box to comment soft element, right click, then menu pop up.



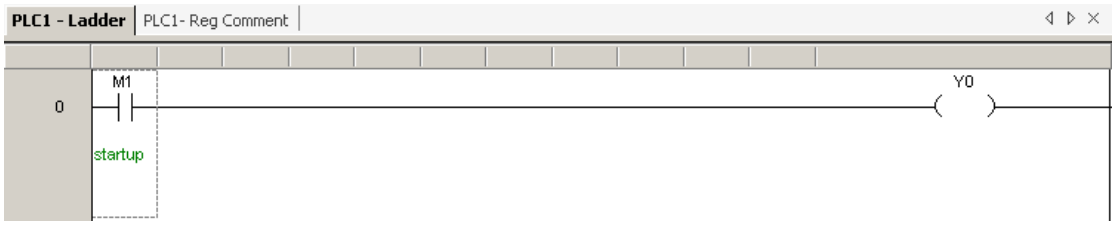
② Click "Modify Reg Comment " icon, the edit comment box pop up;



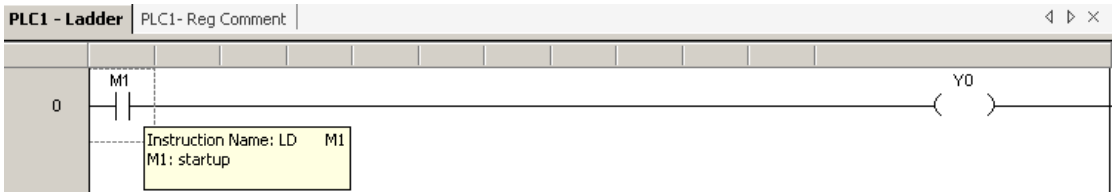
③ Add and modify words in dialog box;



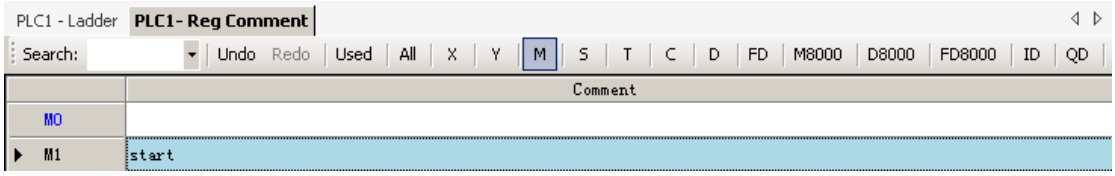
④ Click "OK", then complete note. In the condition of show node comment, all the comment information will show in the bottom of the element.



➢ In the mode of ladder chart don't show comment, move the mouse to soft element, then a information box will emerge to show soft element comment information.

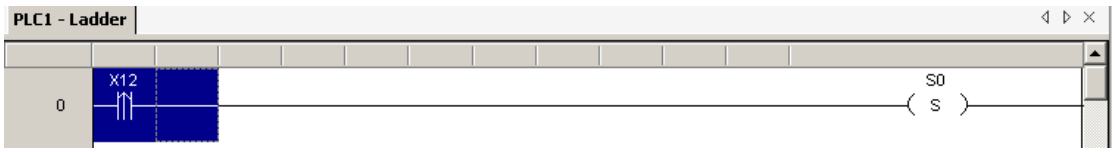


➢ Click "Reg Comment" in the left project bar, or click "View" in menu bar→ "Node Comment List", PLC soft element comment table pop up, you can view, modify, add all soft element comment in the table. The display mode can be classify display, can also be whole display.

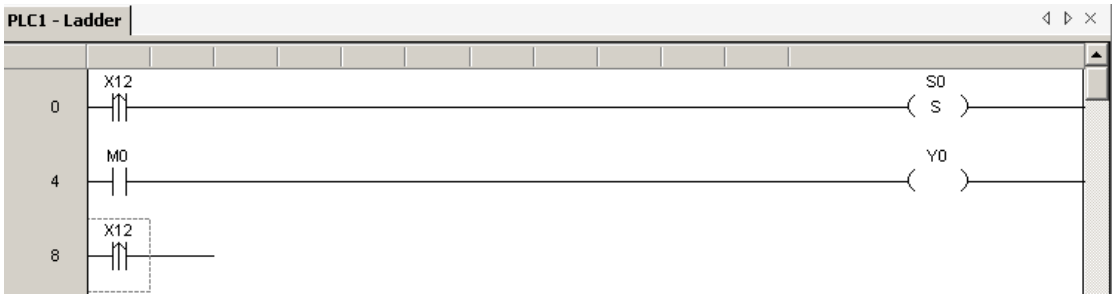


5-3-4. Ladder chart copy and cut

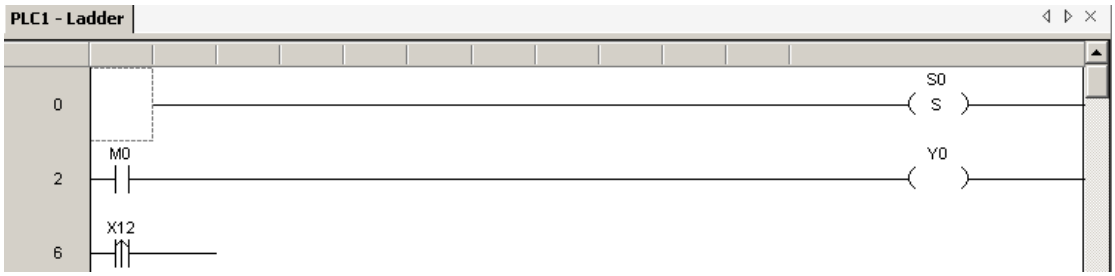
- **Copy:** mov the dotted line box to input place, press and drag the mouse, the selected area will show in anti-color, click (or press Ctrl+C);



Then move the dotted line box to paste place, click (or press Ctrl+V)



- **Cut:** drag mouse and select the cut area, press (or press Ctrl+X), then move the dotted line box to paste place, click (or press Ctrl+V).

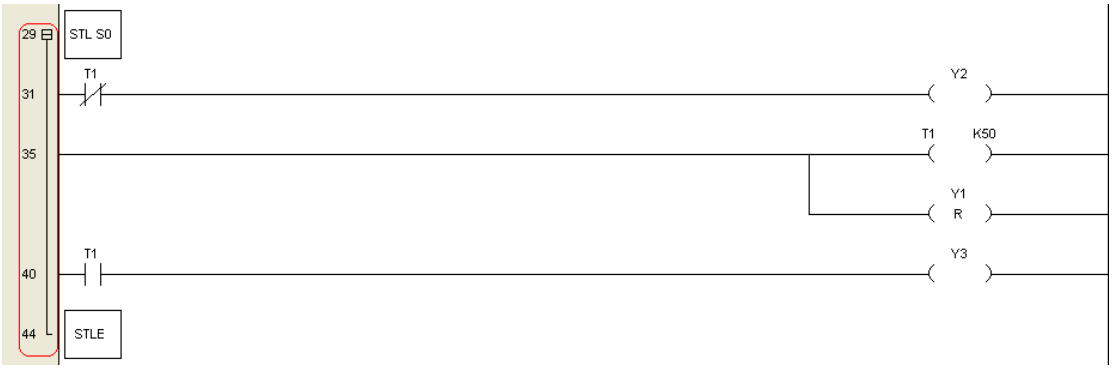


Note: You can press Ctrl to select multi-node for cutting or pasting.

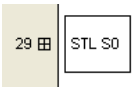
5-3-5. Ladder chart instruction management

1、The fold and unfold of sentence

When user procedure is too long, effective instruction management can help user with clear thinking, then they can complete program favoringly.

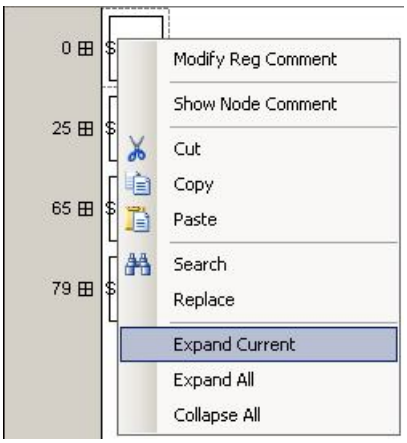


The previous figure is a segment flow sentence, the left side in hoariness marked with relevant row number of sentence. From the begining to end flow, there's a brace start with "⊟". Click "⊟", it will turn to "⊞", and the relevant sentence are folded, as shown below:



Usually, the sentence fold only apply for flow, circle and other sentence. After folded, the program is much more concise, to help users better grasp the overall program situation.

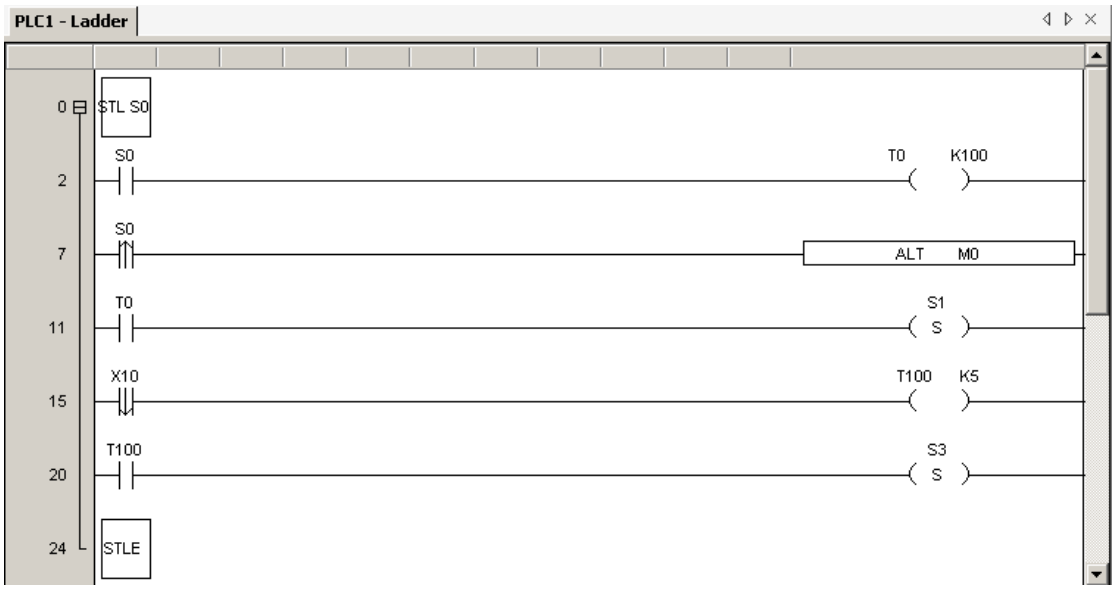
Fold and expand can carry out by the right-mouse menu, as follows:



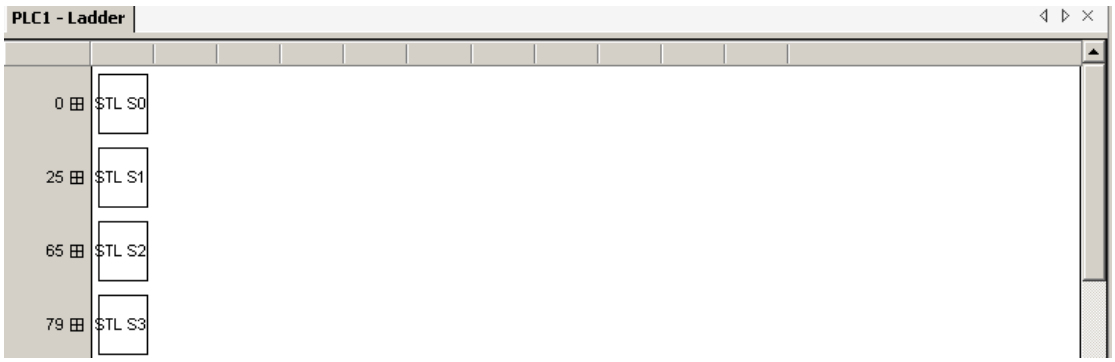
2、 GROUP/GROUPE

Though fold, expand function don't suit for normal sentence, but with the help of "GROUP/GROUPE" to organize sentence into groups, fold/expand are also suitable.

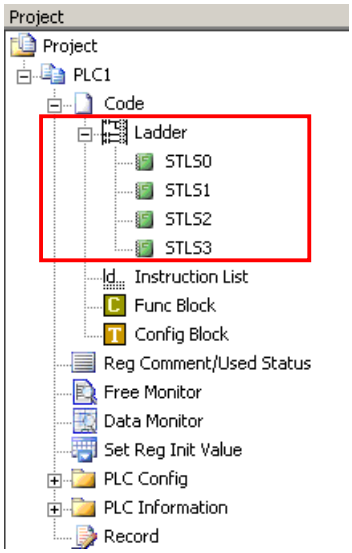
"GROUP" and "GROUPE" instructions don't have practical significance, only dispose the program on formal. Usually, a GROUP start with "GROUP", end with "GROUPE", the middle part is effective user program. The GROUP rely on different functions of sentence, or others. The following is an example of GROUP, only need to input directly.



If fold all sentence, it will be the effect as follows. When you want to descry a certain section program, only need to click "⊞".



At the same time, convenient for management, users also can descry in the nearside project bar, as shown below, all folden item are noted in "ladder", double-click to expand.



5-4. Relevant config

5-4-1. PLCserial port settings

1、Click "PLC config" in project bar→"serial port", serial port set box pop up.

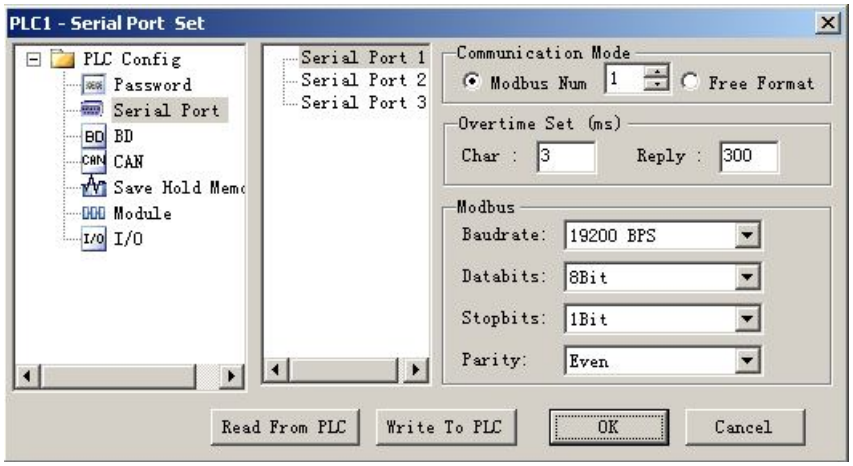
2、Click "serial port 1", "serial port 2", "serial port 3" to set different serial ports.

3、There are two optional communication modes, "Modbus" and "Free protocal".

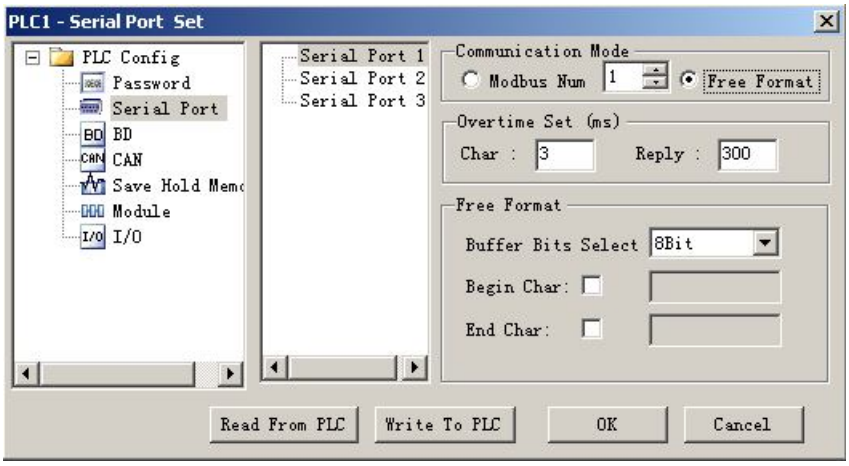
4、Click "Read From PLC" to get PLC default parameter.

5、Click "Write Into PLC" to write current parameter into PLC, PLC re-power. 。

Modbus communication

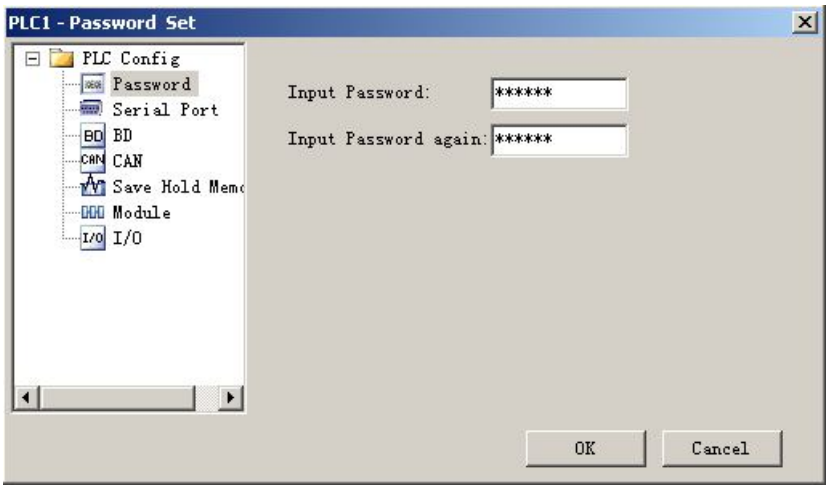


Free protocal communication



5-4-2. Password settings

Click "PLC Config" in project bar→"Password", password set box pop up for password setting and modification, work toghter with lock/unlock functions.

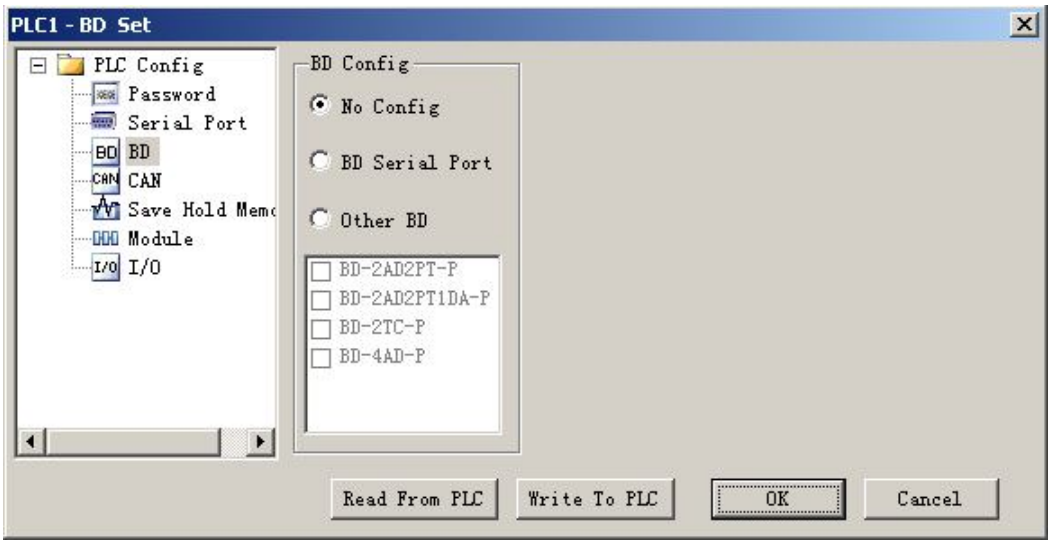


5-4-3. BD board settings

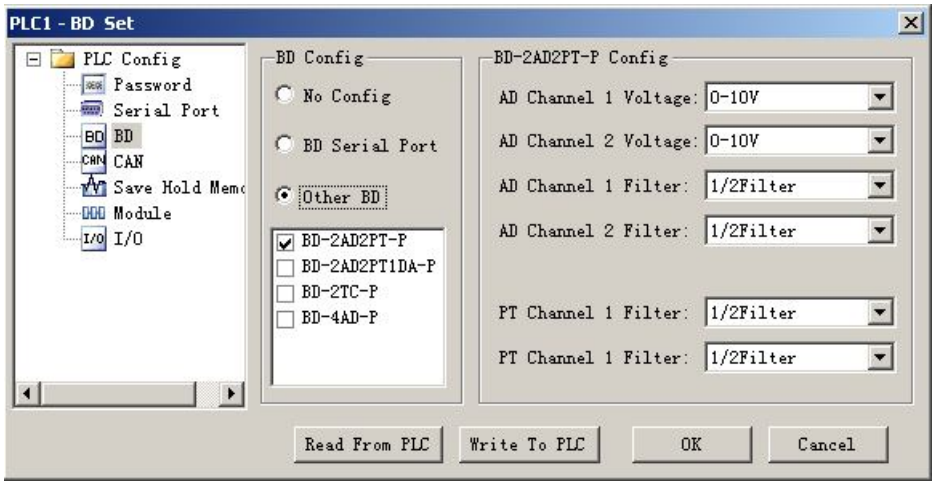
Click "PLC Config" in project bar→"BD", BD set box pop up.

- In "BD Config", you can choose "No config", "BD serial port", "Other BD board".
- Click "Read from PLC" to get default BD config parameter.
- After modified with BD board parameter, click "Write to PLC" to write set value into PLC.

EX: take "2AD2PT-P" type BD config as example, first choose "other BD" in "BD Config", then choose relevant BD board type in the below dialog box.

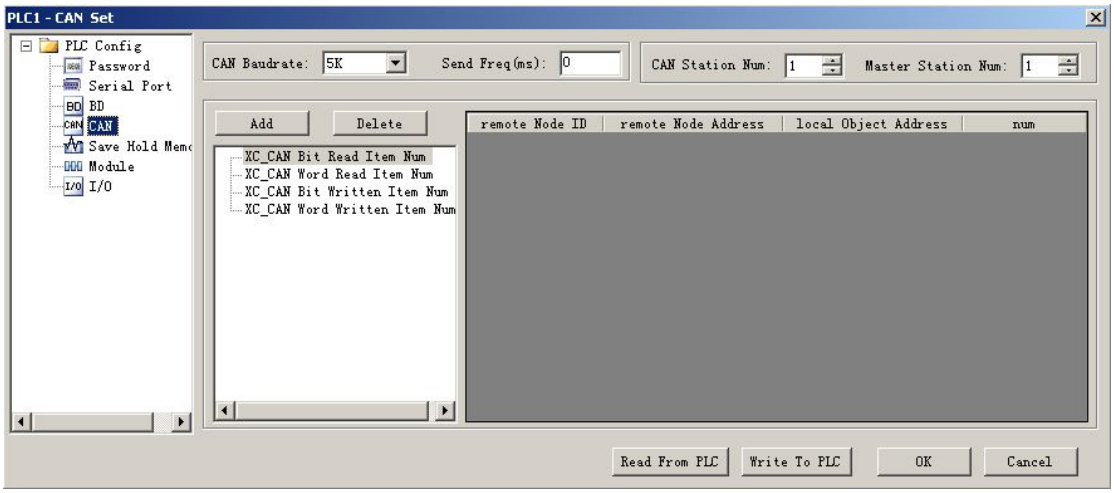


Click the little box before "BD-2AD2PT-P", hook it, then "BD-2AD2PT-P config" box appear in the right. Click drop-doen menu to modify its configuration, after modify finished, click "Write To PLC".

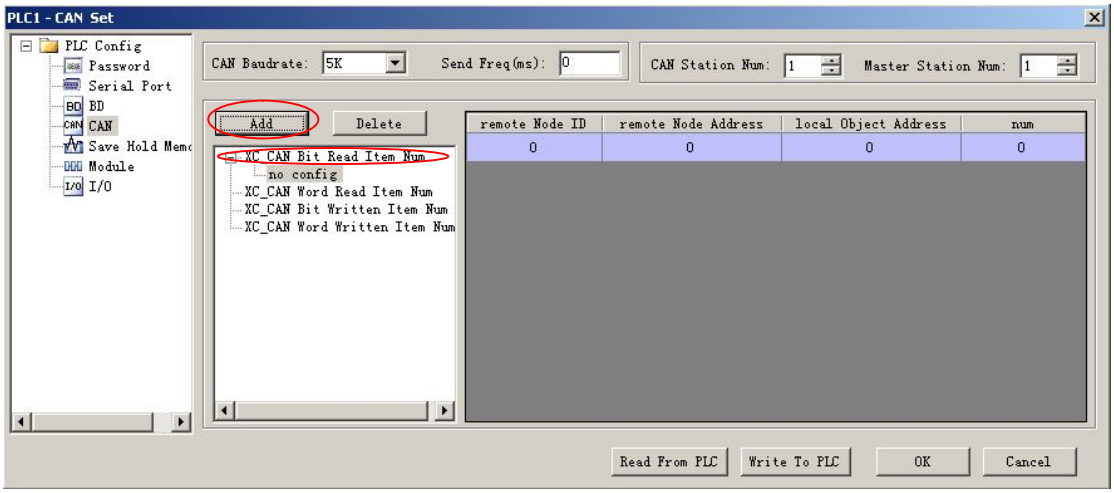


5-4-4. Can-bus comunication config

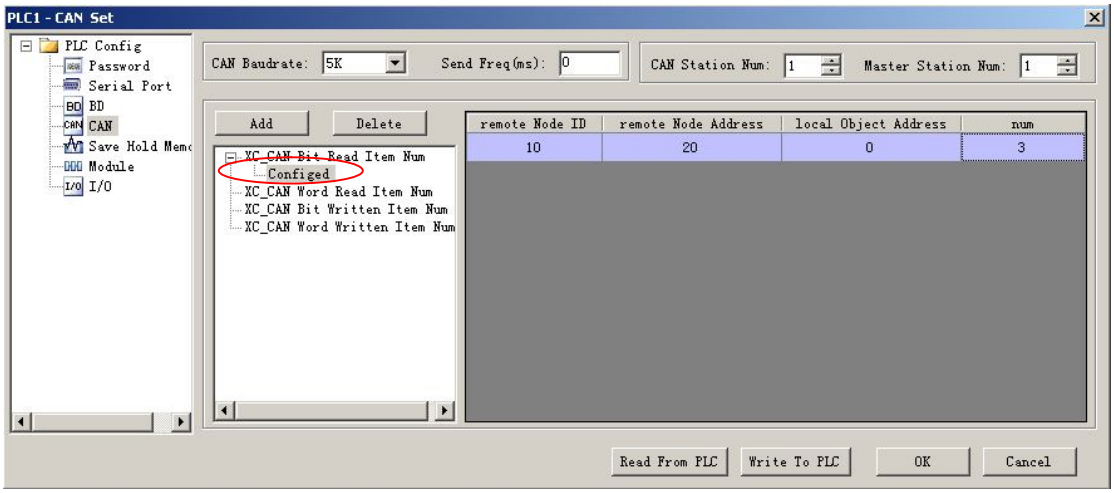
Click "PLC config" in project bar→"CAN", CAN config settings dialog box pop up.



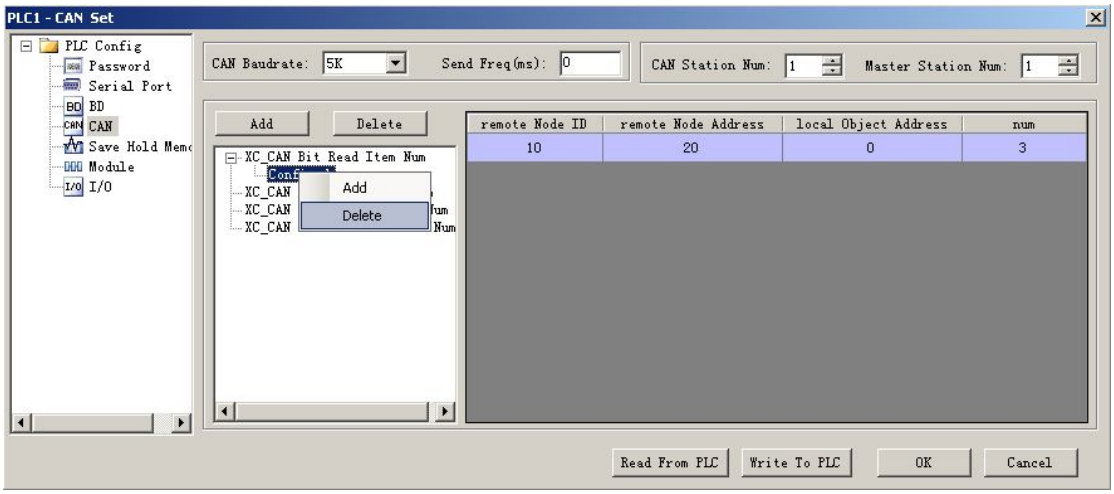
- Add: first select the configure item, then click "add" button to add address;



- Delete: select "configed", click "delete" button.



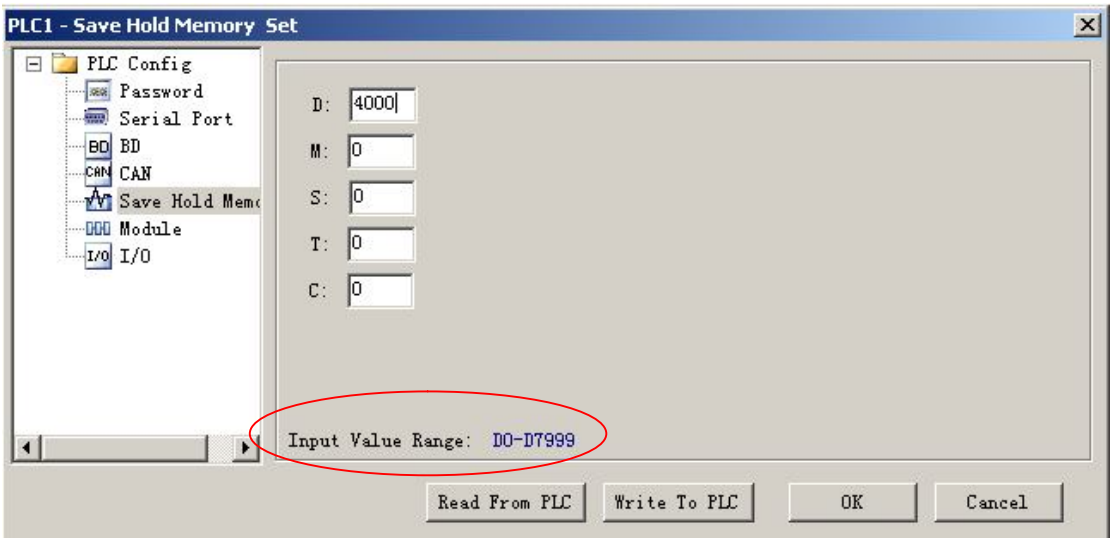
Note: the add and delete of item can also first select operation item, right-click, choose operation in the pop-up menu.



5-4-5. Power-off retentive save memory settings

Click "PLC Setting" in project bar→"Hold Mem Setting", save hold memory set box pop up.

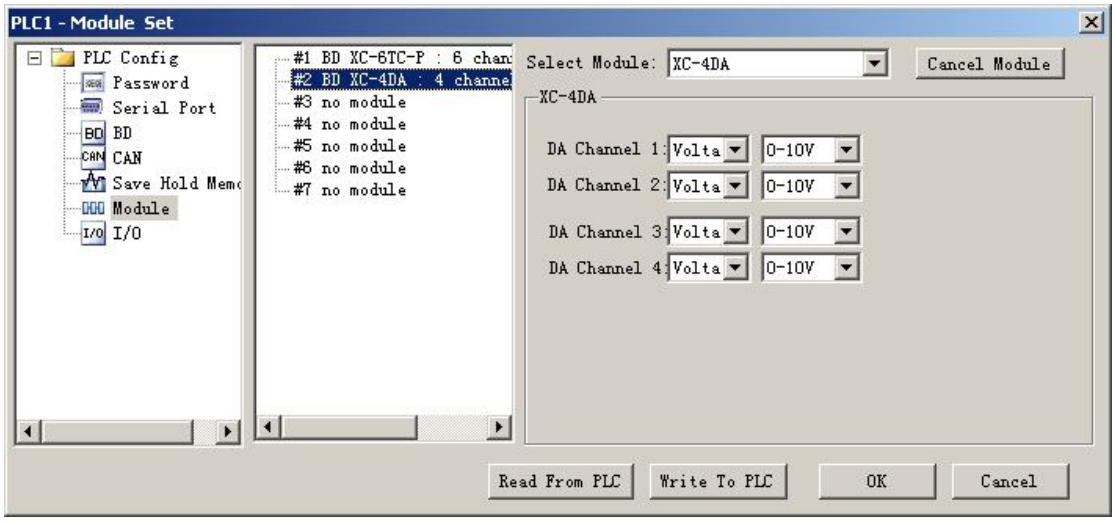
- The value show in the right box of each soft element, is the power-off retentive area original address. The "Input Value Range" in the lower left side, show the soft element effective range.



5-4-6. Expansion module settings

Click "PLC config"→"expansion module", expansion module setting box pop up.

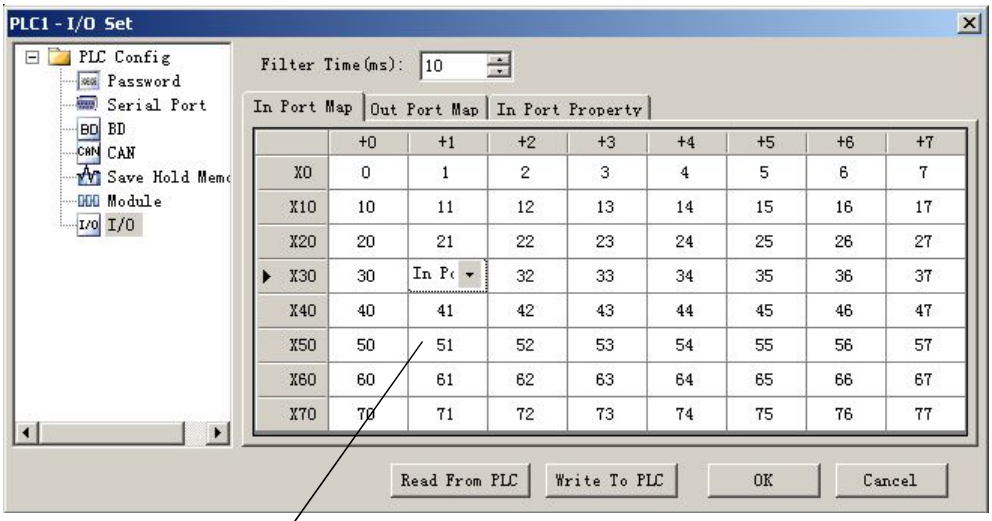
- Click "Read From PLC" to get default configure parameter of expansion module.
- After the settings of expansion module parameter, click "Write To PLC" to write set value into PLC.

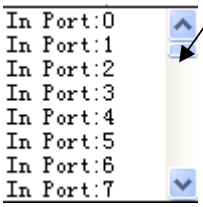


5-4-7. I/O settings

Click "PLC config" in project bar→"I/O settings", I/O setting box pop up.

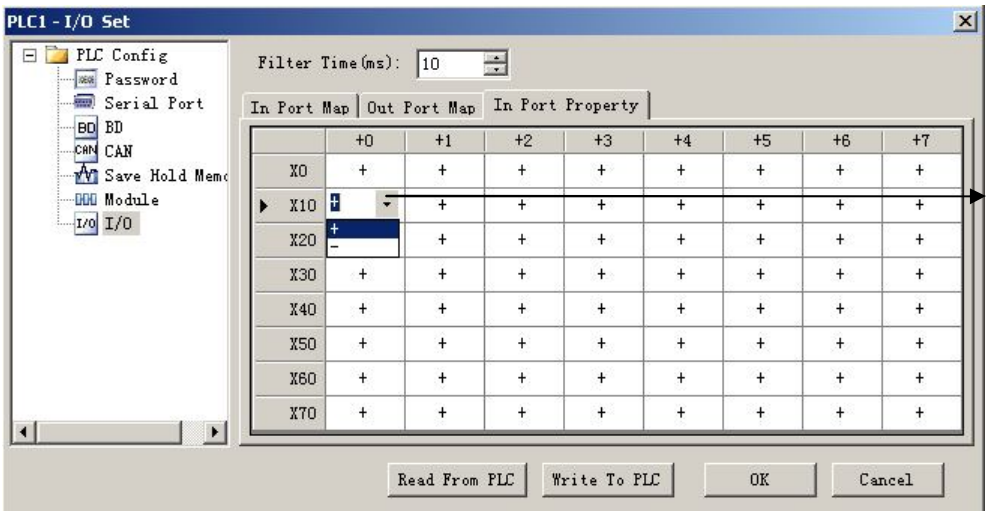
- I/O point mapping: refer to the relevant actual input, output definition of internal soft element number. Such as, set value to be 0 in X0,X1position, then when input terminal is ON, soft element X0,X1 all set ON; if the set value in Y0,Y1 position all are 0, then only while soft element Y1 is ON, output terminal Y0 has export.





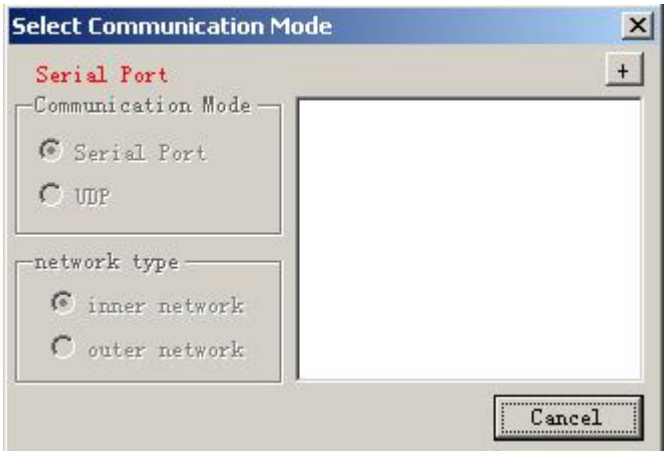
Click X31, pop up drop-down options, as left

- In port property: when it's "+", the input and output state is positive logic; when it's "-", the input and output state is negative logic.



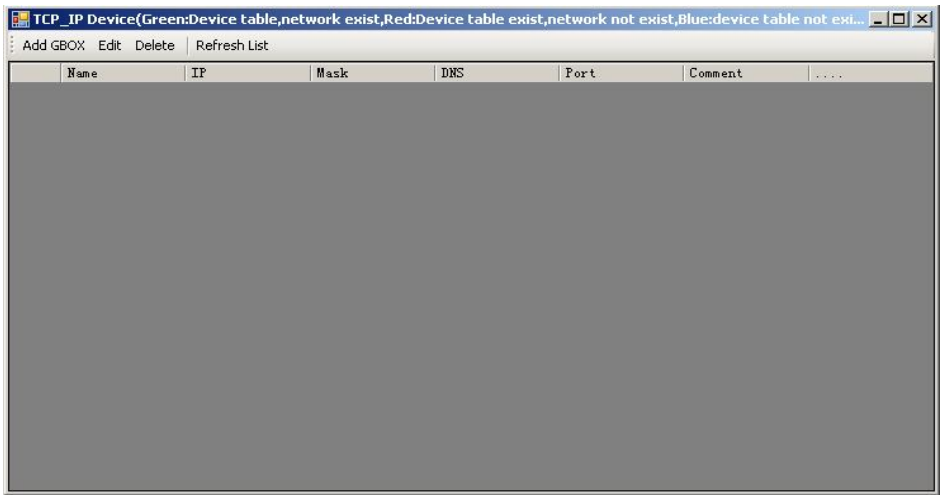
In in port property, 0,1 are correspond with positive and negative logic.

5-4-8. Comunication mode settings

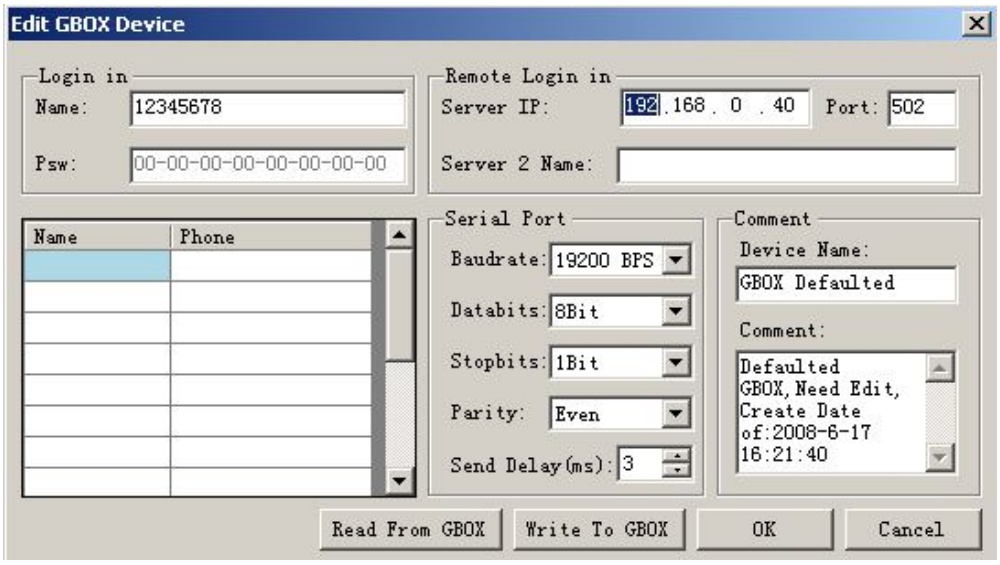


Communication mode settings is usually used to set communication mode of computer and connection device(include main unit PLC, net module).

The default communication mode is serial port, when click "+", it will open TCP/IP device(viz.TCP/IP settings) window, as shown below:

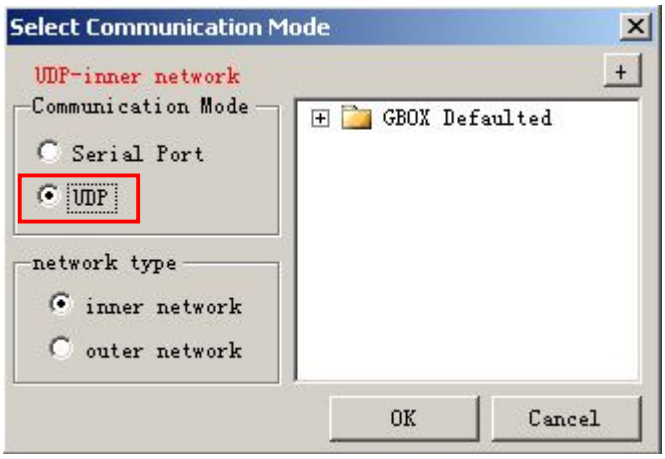


Click "Add GOX" button, users can add communication device here, window pop up as follows:

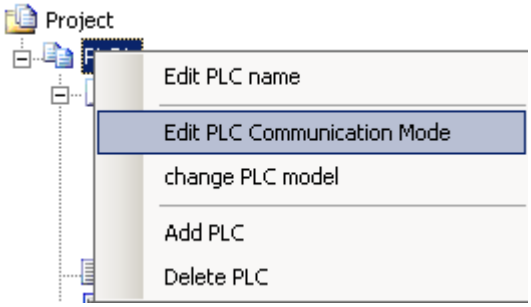


Set relevant parameter in the window, concrete parameter set, please see from <<Wireless data transmission module G-BOX user manual>>, no repeat here.

After add successfully, communication mode setting interface have changed, item UDP is activated, network type is activated also. Usually G-BOX use inner network type, while T-BOX use outer network type, as shown below:



Comunication mode settings can also via click relevant PLC name in project bar, right click, select "Edit PLC Communication Mode" in pop-up menu, as shown below:

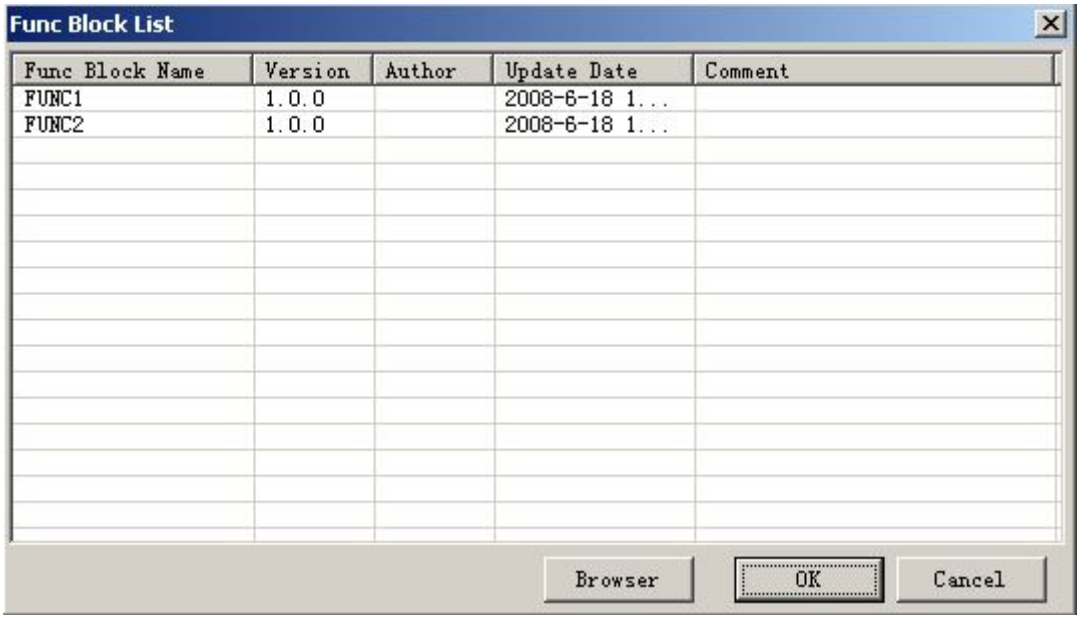


5-4-9. TCP/IP settings

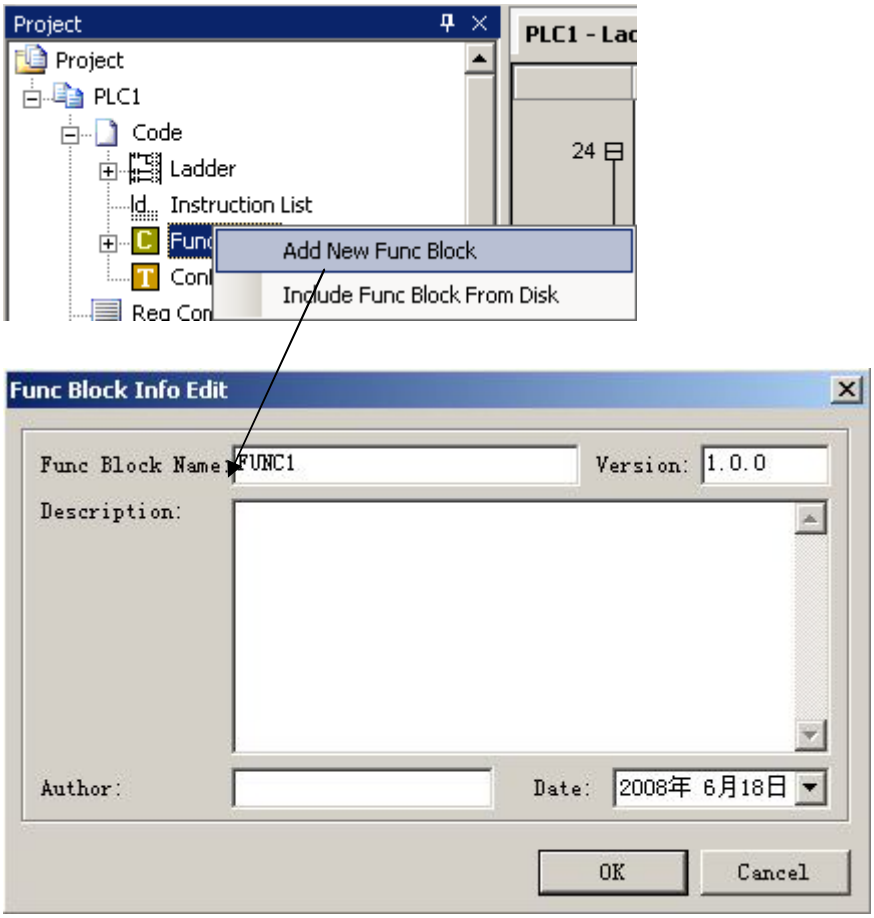
Set window is the same as "TCP/IP device", it can only activate UDP communication after TCP/IP device configured

5-4-10. Function block list

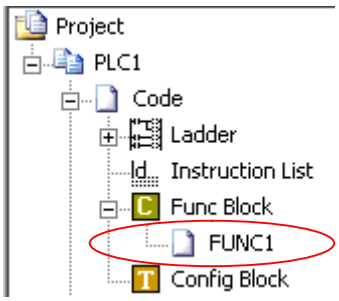
The window is use to show used C language function block and relevant information.



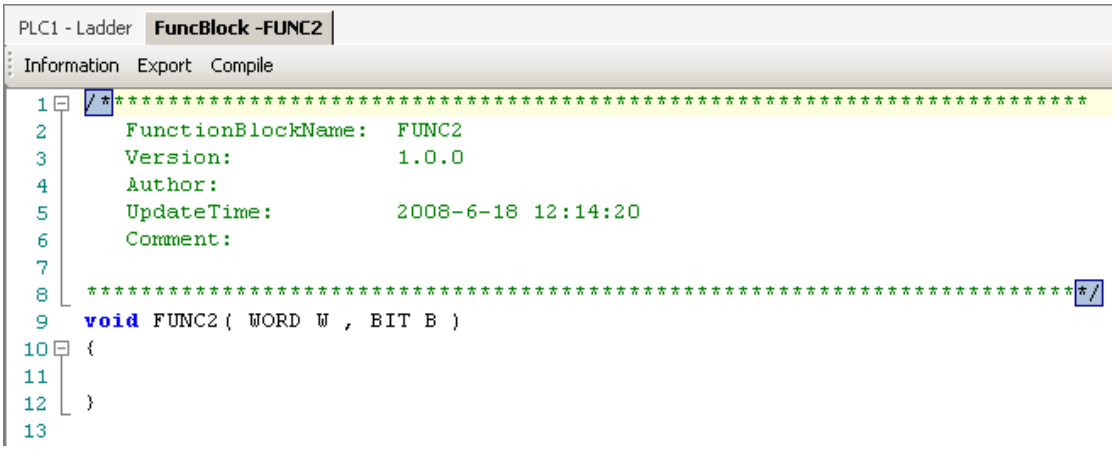
Function block directly compile in software, it can save and export after completed, and can be directly transfered in ladder chart, shown as below:



After confirm the input function block basic information, you will find a "FUN1" added in the project bar, as shown below:



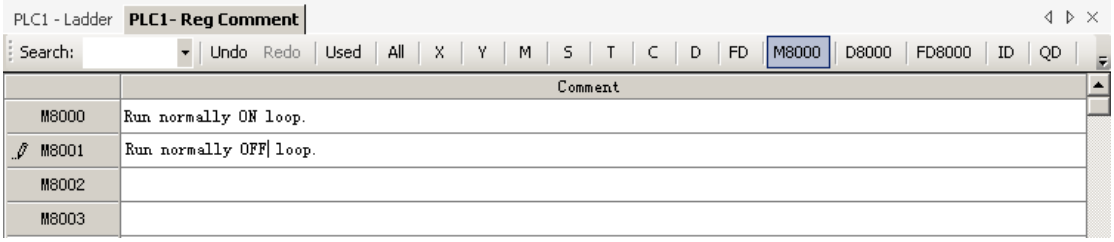
Click "FUN1", the following interface appear in main window, users edit program here. If still need to use after exit project, you can educe and save it, as shown below:



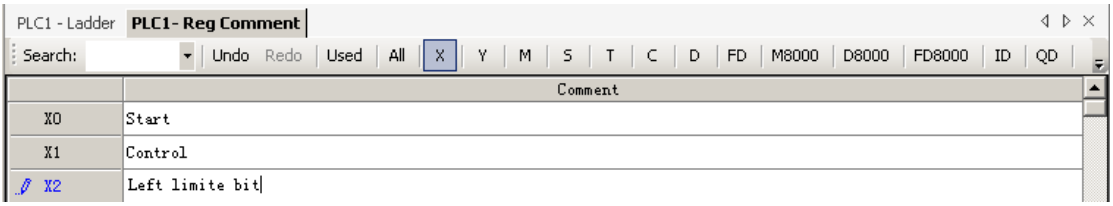
5-5. Soft element monitor

5-5-1. Soft element comment

Click "Reg comment" in project bar, soft element comment window pop up, you can see whole or part soft element comment, double-click comment bar can edit the comment.

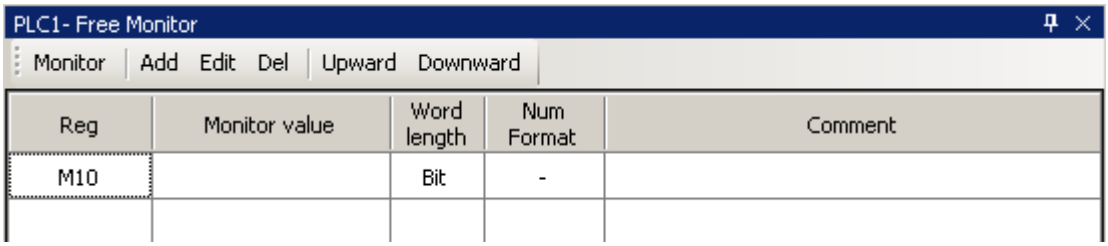


Click "used" in window, the used soft element window pop up, the used element number list respectively.

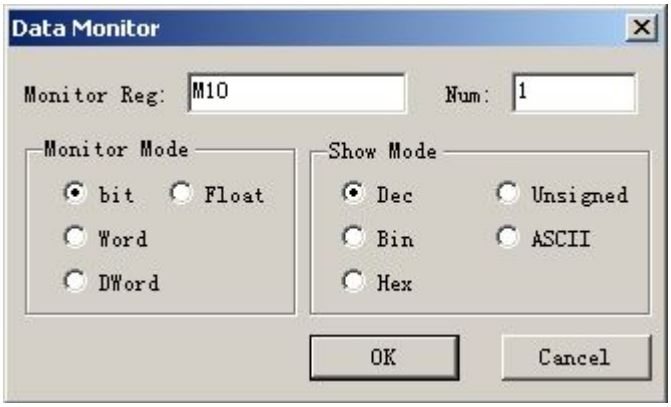


5-5-2. Free monitor

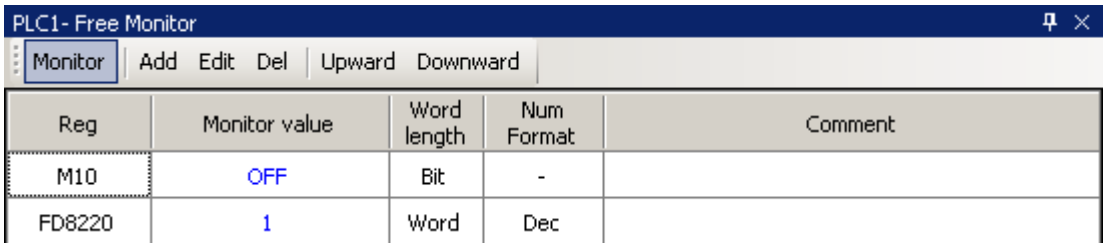
Click "free monitor" in project bar, the free monitor window pop up.



Click "Add", "monitor node input" window pop up: input the monitor soft element capital address in "Monitor Reg" bar, set the continuous monitoring soft elements number in "Num", select soft element monitor method in "Monitor Mode" bar, select soft element show mode in "Show Mode" bar.

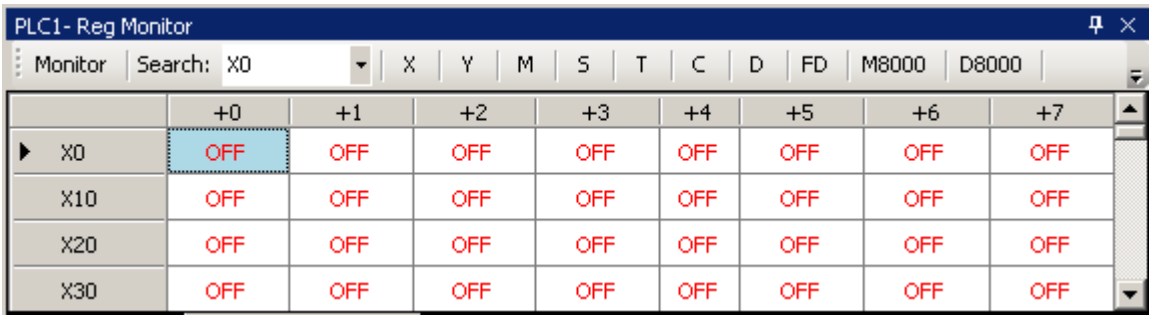


After addedsuccessfully, serial number, value, word length, number format and comment of relevant element list in monitor window, double-click relevant place can edit its attribute.

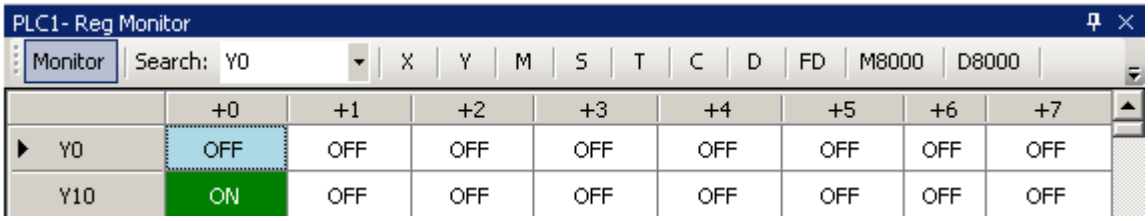


5-5-3. Data monitor

Click "data monitor" in project bar, data monitor window pop up. Data monitor monitor loop state, data register value in list, it can also modify register value or loop state directly.


PLC1- Reg Monitor
Monitor
Search: X0
X Y M S T C D FD M8000 D8000
+0 +1 +2 +3 +4 +5 +6 +7
X0 OFF OFF OFF OFF OFF OFF OFF OFF
X10 OFF OFF OFF OFF OFF OFF OFF OFF
X20 OFF OFF OFF OFF OFF OFF OFF OFF
X30 OFF OFF OFF OFF OFF OFF OFF OFF

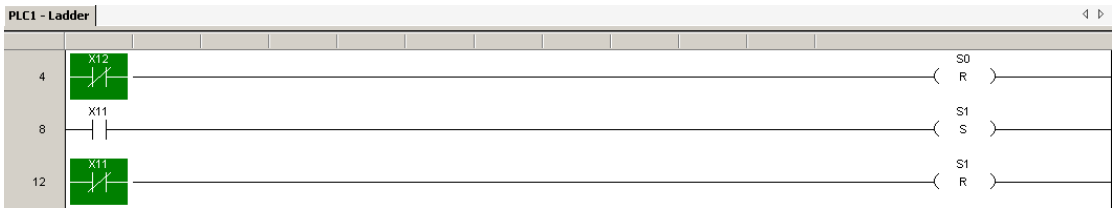
- Mouse double-click loop, then state negation; double-click register, then activate value modification, press enter to affirm input.
- Input relevant soft element number in search bar, press enter, monitor table will automatically jump to relevant place.
- When loop state is OFF, it's blue-background black word; when is ON, it's green-background white word, shown as below:


PLC1- Reg Monitor
Monitor
Search: Y0
X Y M S T C D FD M8000 D8000
+0 +1 +2 +3 +4 +5 +6 +7
Y0 OFF OFF OFF OFF OFF OFF OFF OFF
Y10 ON OFF OFF OFF OFF OFF OFF OFF

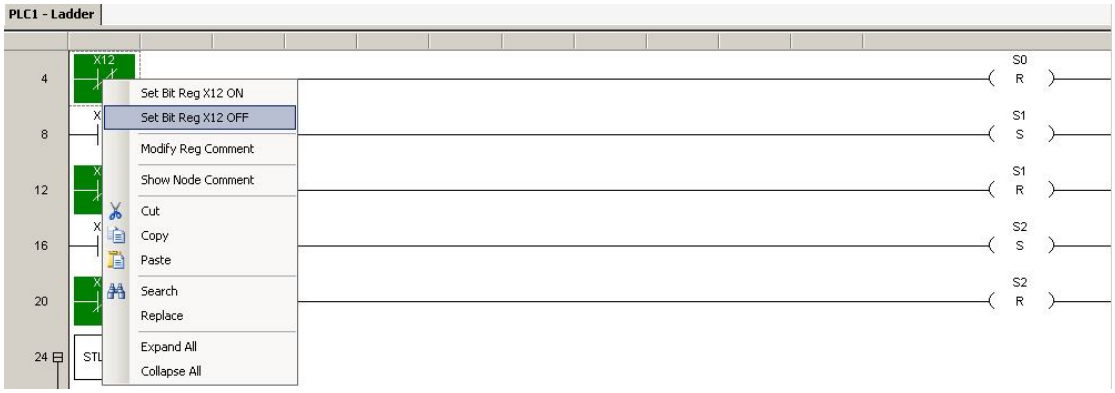
5-5-4. Ladder chart monitor

When PLC connect successfully, and in the run state, user can predominate run state via ladder chart monitoring, and especially usefully for program debugging.

Click " " icon in toolbar, open ladder chart monitor, soft element state of program all show, loop in green-background white-word is ON state, real-time data in timer, register show also in ladder chart, shown as follows:



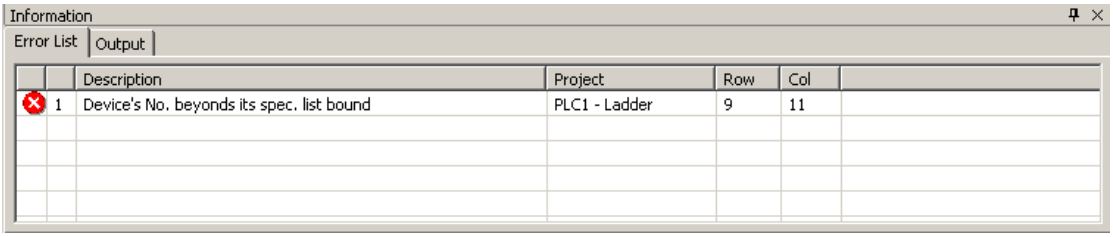
For convenient debugging, users can right-click soft element, change the current state, look around the revised operating results



5-5-5. Information bar

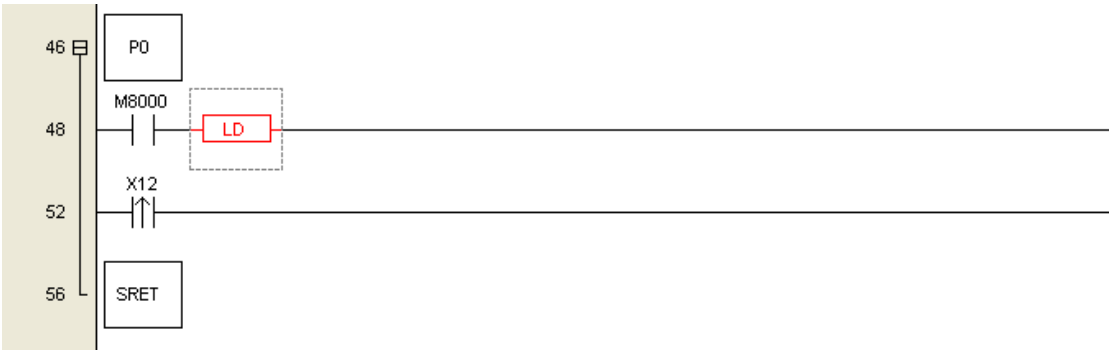
Information bar contains "Error information" and "Output".

Error information: for showing syntax and run error, generally speaking, when users edit ladder chart, if sentence error, press enter, it will show in red, and show error in error information list. Shown as follows:

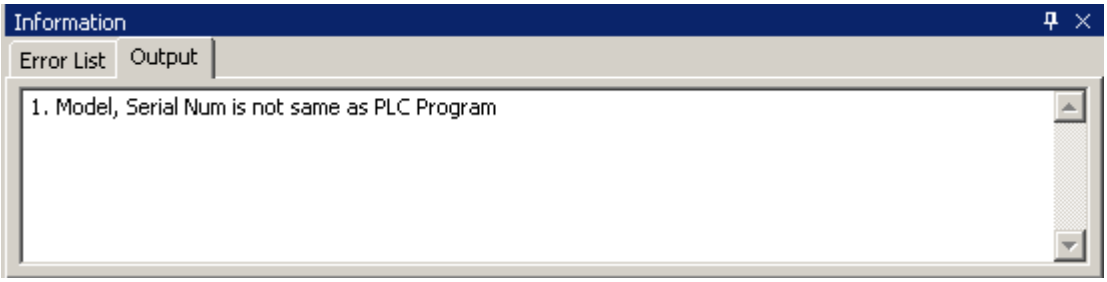


If only check on sentence, you can click "PLC operate"→"Grammar check".

Double-click error information, then cursor will position to error place automatically, shown as below:



Output: Usually when PLC run error, relevant information writen into output bar, clue on operation error. As shown below:



The display of information, data monitor and free monitor can switch via button in below of window, shown as below:

5-5-6. Status bar

The status bar not only shows the relevant information of the current enabled PLC, users can double-click the status display information, to quickly open the modify attributes window, as shown below: